

Dictionary of Electronics Engineering

All Terminology of Electronics

Presented by Engineering Bug

Dictionary of Electronics and Communication Engineering

**All Terms of Electronics and
Communication
Engineering and its applications.**

Introduction

This is Dictionary of Electronics and Communication Engineering. It include all the terms used in the Electronics Engineering, Electrical Engineering and Commonly used terms of computing.

It will help to find and understand the meaning of terms used in Different branches of Electronics.

It helps Students, teachers and Professional in Research work.

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Contents

It include the terms related to every branch of **Electronics**.

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- Wireless Sensor Network
- Zener Diode
- Zener Regulator

And so many

"O" RING: A doughnut-shaped ring of rubber used as a seal around the periphery of the mating insulator interface of cylindrical connectors.

(CAP) : (CAP) an implementation of a quadrature amplitude modulation transmitter in which the passband in-phase and quadrature signals are generated directly via quadrature digital

filters. A recent application for CAP is high-speed digital subscriber lines. See also quadrature amplitude modulation.

(IGBT: Insulated Gate Bipolar Transistor

100BaseT - : A synonym for the Fast Ethernet network standard. The "100" refers to a maximum data transfer rate of 100 megabits per second over twisted pair, copper wire.

10BaseT: A synonym for the Fast Ethernet network standard. The "10" refers to a maximum data transfer rate of 10 megabits per second over twisted pair, copper wire.

10K: A grade level Box or Cover rating. See "Incidental Light Traffic".

1A: 1 Normally Open

1B: 1 Normally Closed

20A: A California ruling that has the investor owned utilities performing the undergrounding of electrical cables. The funds to perform the work are derived from rates and go into a sinking fund that is used at the discretion of the municipality the electric

20B: A California ruling that has the investor owned utilities performing the undergrounding of electric cables. The funds to perform this work are derived from a combination of rates and the developer of the land the line is on. This work is done at the di

20C: A California ruling that has the investor owned utilities performing the undergrounding of overhead electrical cables. The funds to perform this work are derived from the developer of the land the line is on.

20K: A grade level Box or Cover rating. See "Occasional Traffic".

2S1W: Two Speed, 1 Winding (motor).

2S2W: Two Speed, 2 Winding (motor).

2-wire circuit, 2-wire line. : One pair of wires which can be used for 1-way transmission, halfduplex transmission, or full-duplex transmission - depending on the type of modem or line driver employed.

3 Phase: See "Three Phase" and "Polyphase"

3270, 3270 information display system. : A very popular ibm data entry and display system which consists of control units, displays stations, printers and other equipment. See display screen following field.

4-wire circuit, 4-wire line. : A circuit using 2 pairs of conductors, one pair for the transmit channel and the other pair for the receive channel.

600 Volt: Electrical systems, cables or service designed to be operated under 1000 Volts.

600V-UD: 600 Volt Underground Distribution Cable.

802.11a: A specification for a wireless LAN that operates in the 5GHz frequency range and provides a data transmission rate of 54Mbps using spread spectrum technology.

802.11b: A specification for a wireless LAN that operates in the 2.4GHz range and provides a data transmission rate of 11Mbps using spread spectrum technology. This specification was known as WiFi but the term now applies to 802a and 802g as well.

802.11g: A specification for a wireless LAN that operates in the 2.4GHz frequency range and provides a data transmission rate, over short distances, of 54Mbps using orthogonal frequency division multiplexing (OFDM) technology.

802.1x: A security standard for wired and wireless LANs.

A: 1) Amperes; Amps. 2) Area. For cables Area is expressed in Circular Mils.

A: Asbestos-insulated, no braid, for dry locations only. In raceways, only for leads to or

within apparatus. Limited to 300V, 200°C.

a c potentiometer: An apparatus for the comparison of a.c. voltages. Balance requires both the magnitude and the phase angle of the unknown voltage to be balanced with the known voltage. This may be done either in cartesian form or in polar form.

A.G.C. Systems: (Automatic Gauge Control) Hydraulic or electric system that supplies the force to the A.G.C. roll force cylinders.

A/D: Analog to digital signal conversion

A/D Conversion: The process of converting an analogue signal into an equivalent digital one utilizing an A/D converter.

A/D Conversion: The electronic process which converts analog signals into digital signals.

A/D Converter: A device that converts analog signals into digital signals

AA: 1) The Aluminum Association. 2) Refers to All Aluminum as in All Aluminum Conductor.

AA: Asbestos-insulated, asbestos or glass braid. Dry locations only. Open wiring. In raceways, only for leads to or within apparatus. Limited to 300V, 200°C.

AAA: Aluminum Association of America

AAAC: All Aluminum Alloy Conductor

AAAC: All aluminum alloy conductor, usually used to refer to 6201 aluminum alloy.

AAC: All Aluminum Conductor.

AAC: Aluminum Alloy Conductors

AAC/TW: All Aluminum Conductor, Trapezoidal Shaped Aluminum Strands.

AAL1: An AAL layer is the ATM protocol that processes constant-bit-rate data.

AAL2: An AAL layer is the ATM protocol that processes variable-bit-rate data.

AAL3/4: An AAL layer in the ATM protocol that processes connectionless or connection oriented packet data.

AAL5: An AAL layer in the ATM protocol that processes data with extensive header information from upper layer protocols; also called the simple and efficient adaption layer (SEAL).

AAR: American Association of Rail Roads

AASC: Aluminum Alloy Stranded Conductors

AASHTO: American Association of Safety Highway Traffic Officials

AB: High-voltage butyl cable.

ABC: Armored bushed cable. BX-armored building wire with polyvinyl chloride insulation, 600V

ABCD: ABCD propagation of an optical ray through a system can be described by a simple 2 2 matrix. In ray optics, the characteristic of a system is given by the corresponding ray matrix relating the ray's position from the axis and slope at the input to those at the output.

ABCD formalism : ABCD formalism analytic method using two-by-two ABCD matrices for propagating Gaussian beams and light rays in a wide variety of optical systems.

ABCD law : ABCD law analytic formula for transforming a Gaussian beam parameter from one reference plane to another in paraxial optics, sometimes called the Kogelnik transformation. ABCD refers to the ABCD matrix.

ABCD matrix : ABCD matrix the matrix containing ABCD parameters.

ABCD parameters : ABCD parameters a convenient mathematical form that can be used to

characterize two-port networks. Sometimes referred to as chain parameters. ABCD parameters are widely used to model cascaded connections of two-port microwave networks, in which case the ABCD matrix is defined for each two-port network. ABCD parameters can also be used in analytic formalisms for prop-agating Gaussian beams and light rays. Ray matrices and beam matrices are similar but are often regarded as distinct.

Aberration : Aberration an imperfection of an optical system that leads to a blurred or a distorted image.

Abnormal event : Abnormal event any external or program-generated event that makes further normal program execution impossible or undesir-able, resulting in a system interrupt. Exam-ples of abnormal events include system de-tecton of power failure; attempt to divide by 0; attempt to execute privileged instruction without privileged status; memory parity er-ror.

Abort: To terminate a process abruptly.

Abort : Abort (1) in computer systems, to termi-nate the attempt to complete the transaction, usually because there is a deadlock or be-cause completing the transaction would re-sult in a system state that is not compati-ble with “correct” behavior, as defined by a consistency model, such as sequen-tial con-sistency.

ABP: Butyl-polyethylene high voltage cable, 75°C.

Abr, autobaud, automatic baud rate detection. : A process by which a receiving device determines the speed, code level, and stop bits of incoming data by examining the first character - usually a pre-selected sign-on character. Abr allows the receiving device to accept data from a variety of transmitting devices operating at different data rates without needing to configure the receiver for each specific data rate in advance.

Abrasion Resistance: Degree of resistance of a material to abrasion or wear

Abrasion Resistance: Ability of material or cable to resist surface wear.

Abrasion Resistant Coating: An abrasion resistant coating is applied to mechanical parts to resist the abrasion and resulting wearing away of components due to friction in moving parts. Coating options vary widely from hard chrome to polymer-based composite coatings and are applied to materials based on the level of bonding and dimensional tolerance that can be achieved.

Abrasion Resistant Steels: A family of steel products developed for those applications involved in sliding and/or impact abrasion.

Abrasive Wear: The displacement and / or detachment of metallic particles from a surface as a consequence of being exposed to flowing fluids or gases.

Abrasive Wheels: Wheels of a hard abrasive, such as Carborundum used for grinding.

ABS: Acrylonitrile butadiene styrene

Absolute address : Absolute address an address within an instruction that directly indicates a location in the program's address space.

Absolute moment : Absolute moment The pth order absolute moment p of a random variable X is the expectation of the absolute value of X raised to the pth power: $p D etjxjup$:

Absolute Pressure: The indicated value of the weight of the earth's atmosphere. At sea level, this value is approximately 14.65 psi (pounds per square inch).

Absolute pressure : Absolute pressure units to measure gas pressure in a vacuum chamber with zero be-ing a perfect vacuum. Normally referred to as psia (pounds per square inch

absolute).

Absolute Pressure (PSIA): Pressure measured relative to a vacuum (absolute zero).

Absolute Shaft Encoders: A shaft encoder is an electro-mechanical device used to measure the rotation angle of mechanical shafts. Absolute shaft encoders can use mechanical contacts or optical sensors to measure the rotation angle and return a unique digital value for each angular position of the shaft. As opposed to incremental (or relative) shaft encoders, absolute shaft encoders always retain the absolute position of the shaft, even if the machine in use experiences a power shutdown or other operational interruption.

absolute value: Value of an expression without regard to sign or phase angle.

absolute zero: The temperature where thermal energy is at minimum. -273.15°C or 0 Kelvin.

Absorbed Glass Mat: Absorbed Glass Mat, also known as AGM, is a newer type of battery construction that uses saturated absorbent glass mats rather than gelled or liquid electrolyte. It is somewhat more expensive than flooded (liquid) type, but offers good reliability and fa

Absorbed Glass Mat: This is the battery technology. AGM (absorbed glass mat) is a special design glass mat designed to wick the battery electrolyte between the battery plates, the electrolyte is held in the glass mats.

Absorber: A material that readily absorbs photons to generate charge carriers (free electrons or holes).

Absorber : Absorber generic term used to describe material used to absorb electromagnetic energy. Generally made of polyurethane foam and impregnated with carbon (and fire-retardant salts), it is most frequently used to line the walls, floors and ceilings of anechoic chambers to reduce or eliminate reflections from these surfaces.

Absorbers: Dark-colored objects that soak up heat in solar collectors.

Absorbing boundary condition (ABC): Absorbing boundary condition (ABC) a fictitious boundary introduced in differential equation methods to truncate the computational space at a finite distance without, in principle, creating any reflections.

Absorption: The property of materials such as clothing, drapes, carpeting on racks, acoustic ceilings, etc., which causes them to soak up or deaden sound.

Absorption : Absorption (1) process that dissipates energy and causes a decrease in the amplitude and intensity of a propagating wave between an input and output reference plane.

Absorption coefficient: Absorption coefficient in a passive device, the negative ratio of the power absorbed (pabsorbed D pin –pout) ratioed to the power in (pin D pincident – prelected) per unit length (l), usually expressed in units of $1/\text{wavelength}$ or $1/\text{meter}$.

Absorption coefficient: The factor by which photons are absorbed as they travel a unit distance through a material.

Absorption edge : Absorption edge the optical wavelength or photon energy corresponding to the separation of valence and conduction bands in solids; at shorter wavelengths, or higher photon energies than the absorption edge, the absorption increases strongly.

Abstract syntax notation 1(ASN.1): A formal language using abstract syntax for defining the structure of a protocol data unit(PDU).

AC: See "Alternating Current"

ac: [see alternating current]

AC: Branch circuit and feeder cables with flexible metal tape armor.

AC adapter: A device intended to convert line voltage alternating current to low voltage AC or DC current.

AC bridge : AC bridge one of a wide group of bridge circuits used for measurements of resistances, inductances, and capacitances, and to provide AC signal in the bridge transducers including resistors, inductors, and capacitors. The Wheatstone bridge can be used with a sinusoidal power supply, and with an AC detector (headphones, oscilloscope), one can use essentially the same procedure for measurement of resistors as in DC applications. Only a small number of other AC bridges are used in modern electric and electronic equipment. A strong selection factor was the fact that in a standard capacitor the electrical parameters are closest to the parameters of an ideal capacitor. Hence, not only a capacitance is measured in terms of capacitance (in resistive ratio arms bridges), but the inductance as well is measured in terms of capacitance (Hay and Owen bridges). The AC bridges with ratio arms that are tightly coupled inductances allow measurement of a very small difference between currents in these inductances, and this fact is used in very sensitive capacitance transducers.

AC circuit : AC circuit electrical network in which the voltage polarity and directions of current flow change continuously, and often periodically. Thus, such networks contain alternating currents as opposed to direct currents, thereby giving rise to the term.

AC coupling : AC coupling a method of connecting two circuits that allows displacement current to flow while preventing conductive currents. Reactive impedance devices (e.g., capacitors and inductive transformers) are used to provide continuity of alternating current flow between two circuits while simultaneously blocking the flow of direct current.

Ac Dc Inverters: Power inverters convert direct current to alternating current for the purpose of operating AC-driven devices from a DC power source such as a low voltage battery. In the DC power source, voltage travels continuously from the negative terminal, through the load, to the positive terminal. A power inverter increases the voltage from the DC source, then converts it to an alternating current using oscillator circuits. Because these oscillator circuits deliver a square wave output, a series of filters, inductors, and capacitors is commonly used to smooth the square wave into a smooth sine wave characteristic of AC power.

AC Input Mode: An I/O module that converts various AC signals originating at user devices to the appropriate logic level signal for use within the processor of a programmable controller.

AC motor : AC motor an electromechanical system that converts alternating current electrical power into mechanical power.

AC Output Module: An I/O module that converts the logic level signal of the processor to a usable output signal to control a user AC device.

AC/AC converter : AC/AC converter a power electronics device in which an AC input voltage of some magnitude, frequency, and number of phases is changed to an AC output with changes to any of the previously mentioned parameters. AC/AC converters usually rectify the input source to a DC voltage and then invert the DC voltage to the desired AC voltage.

ACA: Synthetic tapes, felted asbestos, glazed cotton or glass braid, 1000V, 90°C.

ACAR: All Aluminum Conductor, Aluminum Alloy Reinforced.

ACAR: Aluminum Conductor Alloy Reinforced

ACARS : ACARS aircraft communications addressing and reporting. A digital communications link using the VHF spectrum for two-way transmission of data between an aircraft

and ground. It is used primarily in civil aviation applications.

ACB: Air Circuit Breaker

ACBM: Acronym for "asbestos-containing building material."

Accelerated Aging: A test performed on material or cable meant to duplicate long time environmental conditions in a relatively short space of time.

acceleration: Rate of change of velocity. [Unit m/s²]

acceleration due to gravity g: Acceleration of a body falling freely in a vacuum as a result of the gravitational pull of the earth. $G=9.807 \text{ m/s}^2$

Accelerator: A substance that hastens a reaction usually acting as a catalyst; as used in sand additive resins.

Accelerator: A chemical additive which hastens a chemical reaction under specific conditions.

Accelerator : Accelerator a positive electrode in a vacuum tube to accelerate emitted electrons from its cathode by coulomb force in a de-sired direction.a machine used to impart large kinetic energies to charged particles such as elec-trons, protons, and atomic nuclei. The ac-celerated particles are used to probe nuclear or subnuclear phenomena in industrial and medical applications.

Accelerometer: A device used to measures proper acceleration or G force. On earth surface it will measure acceleration equals to 9.81 m/s^2 . its also used in smart phones and cameras.

Accent Lighting: directional lighting to emphasize a particular object or dawa attention to a part of the field of view.

Acceptable delay : Acceptable delay the voice signal de-lay that results in inconvenience in the voice communication. A typically quoted value is 300 ms.

Acceptance : Acceptance in an accelerator, it defines how "large" a beam will fit without scrap-ing into the limiting aperture of a transport line. The acceptance is the phase-space vol-ume within which the beam must lie to be transmitted through an optical system with-out losses. From an experimenters point of view acceptance is the phase-space vol-ume intercepted by an experimenter's detec-tor system.

Accepted interference. : Interference at a higher level than that defined as permissible interference and which has been agreed upon between two or more administrations without prejudice to other administrations.

Acceptor: A dopant material, such as boron, which has fewer outer shell electrons than required in an otherwise balanced crystal structure, providing a hole, which can accept a free electron.

Acceptor : Acceptor an impurity in a semicon-ductor that donates a free hole to the valence band. A dopant species that traps electrons, especially with regard to semiconductors.

Access channel : Access channel a channel in a communi-cations network that is typically allocated for the purpose of setting up calls or communi-cation sessions. Typically the users share the access channel using some multiple access algorithm such as ALOHA or CSMA.

Access control : Access control a means of allowing ac-cess to an object based on the type of ac-cess sought, the accessor's privileges, and the owner's policy.

Access control (AC) field: A field in a Token Ring frame containing priority, token, monitor, and reservation bits.

Access control list : Access control list a list of items associ-ated with a file or other object;

the list contains the identities of users that are permitted access to the associated file. There is information (usually in the form of a set of bits) about the types of access (such as read, write, or delete) permitted to the user.

Access Control Systems: Access control systems define the wide range of security solutions used to provide an individual or corporate authority access control over its facilities and/or computer systems. Access control systems can be small home security systems or large corporate-wide computer systems. Access is granted via an electronic key, or passcode, or a combination of hardware and software keys.

Access control. : The prevention of unauthorised use of a resource, including the prevention of use of a resource in an unauthorised manner. (nato)

Access group. : (in lan technology) all stations which have identical rights to make use of computer, network, or data resources.

Access line : Access line a communication line that connects a user's terminal equipment to a switching node.

Access mechanism : Access mechanism a circuit board or an integrated chip that allows a given part of a computer system to access another part. This is typically performed by using a specific access protocol.

Access method (1). : (in ibm environments) a host program managing the movement of data between the main storage and an input/output device of a computer system; stam, tcam, vtam are common data communications access methods.

Access method (2). : (in lan technology) a means to allow stations to gain access to - to make use of - the network's transmission medium; classified as shared access (which is further divided into explicit access or contended access) or discrete access method.

Access Point: A wireless networked device usually connected to a wireless LAN used to access the wired LAN.

Access Point: AP or access point is a device that allows wireless devices to connect to wire networks .AP can be a integral part or external part which connects to router with a wired network.

Access protocol : Access protocol a set of rules that establishes communication among different parts. These can involve both hardware and software specifications.

Access rate: In Frame Relay, the data rate that can never be exceeded.

Access right : Access right permission to perform an operation on an object, usually specified as the type of operation that is permitted, such as read, write, or delete. Access rights can be included in access control lists, capability lists, or in an overall access control matrix.

Access time : Access time the total time needed to retrieve data from memory. For a disk drive this is the sum of the time to position the read/write head over the desired track and the time until the desired data rotates under the head. (LW)

access. : A discrete radio frequency carrier reaching and translated by a satellite transponder, within its acceptance bandwidth

Accessible: (as applied to equipment) Admitting close approach not guarded by locked doors, elevation, or other effective means. (see Accessible, Readily)

Accessible: (As applied to wiring methods) Capable of being removed or exposed without damaging the building structure or finish, or not permanently closed in by the structure or finish of the building.

Accessible, Readily: (Readily Accessible) Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc.

accessory : A device, other than current using equipment, associated with such equipment or with the wiring of an installation.

Accidental rate : Accidental rate the rate of false coincidences in the electronic counter experiment produced by products of the reactions of more than one beam particle within the time resolution of the apparatus.

ACCM: In hypereutectoid steel, the temperature at which cementite goes into complete solution with austenite.

Account classification: The way in which suppliers of electricity, natural gas, or fuel oil classify and bill their customers. Commonly used account classifications are "Residential," "Commercial," "Industrial," and "Other." Suppliers' definitions of these terms vary from supplier to supplier. In addition, the same customer may be classified differently by each of its energy suppliers.

Account of others (natural gas): Natural gas deliveries for the account of others are deliveries to customers by transporters that do not own the natural gas but deliver it for others for a fee. Included are quantities covered by long-term contracts and quantities involved in short-term or spot market sales.

Accountability.: The property that ensures that the actions of an entity may be traced uniquely to the entity. (nato)

Accounting symbol. : A combination of letters used in the message heading to identify the agency, service or activity which is financially accountable for the message.

Accounting system: A method of recording accounting data for a utility or company or a method of supplying accounting information for controlling, evaluating, planning and decision-making.

Accreditation. : The authorisation and approval granted to a data processing system network to process classified information in its operational environment. (nato). Accreditation is the official management authorisation to operate a cis or network:

Accumulation : Accumulation (1) an increase in the majority carrier concentration of a region of semiconductor due to an externally applied electric field.

Accumulator: A vessel, normally cylindrical, which is used to store fluid and gas for future release of the energy in the compressed fluid and gas. Normally contains a diaphragm or piston between the fluid (liquid) and gas chambers. Fluid is normally introduced at one end and the gas at the opposite end.

accumulator: Storage battery or secondary cell for storing electricity.

Accumulator : Accumulator (1) a register in the CPU (processor) that stores one of the operands prior to the execution of an operation, and into which the result of the operation is stored. An accumulator serves as an implicit source and destination of many of the processor instructions. For example, register A of the Intel 8085 is an accumulator.

Accuracy: Close of a reading or indication of a measurement device to the actual value of the quantity being measured.

Accuracy: A number used to indicate the accuracy range of a measurement transducer, according to the defined standard.

accuracy: Specifies the nearness of the measured value from the true value.

Accuracy: Accuracy is the degree of measurement of desired results for calculations or values. It states any calculations of being correct or preciseness of values. Generally it is measured in numerical values.

Accuracy: The total of all deviations from a specified straight line including the sum of nonlinearity, repeatability, and hysteresis expressed as a percent of full scale output.

Accuracy Class: The degree of uncertainty for which a measured value agrees with the ideal value.

Accuracy Class: A figure which represents the error tolerance of any measuring devices. Accuracy class is used in IEC and ANSI standards. It is denoted by letters and percentage.

AC-DC integrated system : AC-DC integrated system a power system containing both AC and DC transmission lines.

Acetyl Tributyl Citrate: One of the lubricating oils generally applied on tin Mill Products (tin plate, TFS chrome/chrome oxide coated steel, and blackplate).

Achromatic : Achromatic the quality of a transport line or optical system where particle momentum has no effect on its trajectory through the system. In an achromatic device or system, the output beam displacement or divergence (or both) is independent of the input beam's momentum. If a system of lenses is achromatic, all particles of the same momentum will have equal path lengths through the system.

Acid: 1) A solution or liquid with a pH less than 7, 2) term applied to slags, refractors, and minerals containing a high percentage of silica.

acid: Containing an excess of hydrogen ions over hydroxyl ions.

Acid Brittleness : Brittleness resulting from pickling steel in acid; hydrogen, formed by the interaction between iron and acid, is partially absorbed by the metal, causing acid brittleness.

Acid Embrittlement: Embrittlement during pickling due to absorption of hydrogen.

Acid mine drainage: This refers to water pollution that results when sulfur-bearing minerals associated with coal are exposed to air and water and form sulfuric acid and ferrous sulfate. The ferrous sulfate can further react to form ferric hydroxide, or yellow boy, a yellow-orange iron precipitate found in streams and rivers polluted by acid mine drainage.

Acid Process: A process of making steel, either Bessemer, open hearth or electric, in which the furnace is lined with a siliceous refractory and for which low phosphorus pig iron is required as this element is not removed.

Acid rain: Also called acid precipitation or acid deposition, acid rain is precipitation containing harmful amounts of nitric and sulfuric acids formed primarily by sulfur dioxide and nitrogen oxides released into the atmosphere when fossil fuels are burned. It can be wet precipitation (rain, snow, or fog) or dry precipitation (absorbed gaseous and particulate matter, aerosol particles or dust). Acid rain has a pH below 5.6. Normal rain has a pH of about 5.6, which is slightly acidic. The term pH is a measure of acidity or alkalinity and ranges from 0 to 14. A pH measurement of 7 is regarded as neutral. Measurements below 7 indicate increased acidity, while those above indicate increased alkalinity.

Acid Steel: Steel melted in a furnace with an acid bottom and lining and under a slag containing an excess of an acid substance such as silica.

Ack, acknowledgment. : A control character used (with nak, negative acknowledgment) in bsc communications protocol to indicate that the previous transmission block was correctly

received and that the receiver is ready to accept the next block. Also used as a ready reply in other communications protocols, such as Hewlett-Packard's enq/ack protocol and the etx/ack method of flow control.

Acknowledge : Acknowledge (1) a signal which indicates that some operation, such as a data transfer, has successfully been completed to detect the successful completion of an operation and produce a signal indicating the success.

Acknowledgement: A response sent by the receiver to indicate the successful receipt and acceptance of data.

Acknowledgement. : A message from the addressee informing the originator that the communication has been received and is understood.

Acoustic attenuation: Acoustic attenuation the degree of amplitude suppression suffered by the acoustic wave traveling along the acousto-optic medium.

Acoustic coupler, acoustical coupler. : A device that converts electrical signals into audio signals, enabling data to be transmitted over the public telephone network via a conventional telephone handset; it also converts the audio signals back into electrical signals at the receiving end. A kind of modulator/demodulator (modem)

Acoustic laser : Acoustic laser a laser (or maser) in which the amplified field consists of soundwaves or phonons rather than electromagnetic waves; phonon laser or phaser.

Acoustic memory : Acoustic memory a form of circulating memory in which information is encoded in acoustic waves, typically propagated through a trough of mercury. Now obsolete.

Acoustic velocity: Acoustic velocity the velocity of the acoustic signal traveling along the acousto-optic medium.

Acoustic wave : Acoustic wave a propagating periodic pressure wave with amplitude representing either longitudinal or shear particle displacement within the wave medium; shear waves are prohibited in gaseous and liquid media.

acoustics: Study of sound.

Acousto-optic cell : Acousto-optic cell a device consisting of a photo-elastic medium in which a propagating acoustic wave causes refractive-index changes, proportional to acoustic wave amplitude, that act as a phase grating for diffraction of light. See also Bragg cell.

Acousto-optic deflector device: Acousto-optic deflector device device where acousto-optic interaction deflects the incident beam linearly as a function of the input frequency of the RF signal driving the device.

Acousto-optic effect: Acousto-optic effect the interaction of light with sound waves and in particular the modification of the properties of a light wave by its interactions with an electrically controllable sound wave. See also Brillouin scattering.

Acousto-optic frequency excisor: Acousto-optic frequency excisor similar to an acousto-optic spectrum analyzer where the RF temporal spectrum is spatially and selectively blocked to filter the RF signal feeding the Bragg cell.

Acousto-optic instantaneous spectrum analyzer in Bragg mode : Acousto-optic instantaneous spectrum analyzer in Bragg mode device in which the temporal spectrum of a radio frequency signal is instantaneously and spatially resolved in the optical domain using a Fourier transform lens and a RF signal-fed Bragg cell.

Acousto-optic scanner: Acousto-optic scanner a device that uses an acoustic wave in a photoelastic medium to deflect light to different angular positions based on the frequency of

the acoustic wave.

Acousto-optic space integrating convolver : Acousto-optic space integrating convolver device that is the same as an acousto-optic space integrating convolver except that it implements the convolution operation.

Acousto-optic space integrating correlator : Acousto-optic space integrating correlator an acousto-optic implementation of the correlation function where two RF signals are spatially impressed on two diffracted beams from Bragg cells, and a Fourier transform lens spatially integrates these beams onto a point sensor that generates a photo current representing the correlation function.

Acousto-optic spectrum analyser: Acousto-optic spectrum analyser an acousto-optic processor that produces at a photodetector output array the Fourier de-composition of the electrical drive signal of an acousto-optic device.

Acousto-optic time integrating convolver : Acousto-optic time integrating convolver same as the acousto-optic time integrating correlator, except implements the signal convolution operation.

Acousto-optic time integrating correlator : Acousto-optic time integrating correlator an acousto-optic implementation of the correlation function where two RF signals are spatially impressed on two diffracted beams from Bragg cells, and a time integrating sensor generates the spatially distributed correlation results.

Acousto-optic triple product processor : Acousto-optic triple product processor signal processor that implements a triple integration operation using generally both space and time dimensions.

Acousto-optic tunable filter (AOTF): Acousto-optic tunable filter (AOTF) an acousto-optic device that selects specific optical frequencies from a broadband optical beam, depending on the number and frequencies of acoustic waves generated in the device.

Acousto-optics : Acousto-optics the area of study of interaction of light and sound in media, and its utilization in applications such as signal processing and filtering.

Acp, allied communications publication. : Acps contain communications instructions and are issued for the guidance and use of allied forces.

Acquisition: Acquisition in digital communications systems, the process of acquiring synchronism with the received signal. There are several levels of acquisitions, and for a given communication system several of them have to be performed in the process of setting up a communication link: frequency, phase, spreading code, symbol, frame, etc.

Acquisition (foreign crude oil): All transfers of ownership of foreign crude oil to a firm, irrespective of the terms of that transfer. Acquisitions thus include all purchases and exchange receipts as well as any and all foreign crude acquired under reciprocal buy-sell agreements or acquired as a result of a buy-back or other preferential agreement with a host government.

Acquisition (minerals): The procurement of the legal right to explore for and produce discovered minerals, if any, within a specific area; that legal right may be obtained by mineral lease, concession, or purchase of land and mineral rights or of mineral rights alone.

Acquisition costs, mineral rights: Direct and indirect costs incurred to acquire legal rights to extract natural resources. Direct costs include costs incurred to obtain options to lease or purchase mineral rights and costs incurred for the actual leasing (e.g., lease bonuses) or purchasing of the rights. Indirect costs include such costs as brokers' commissions and

expenses; abstract and recording fees; filing and patenting fees; and costs for legal examination of title and documents.

acre : Unit of area in the Imperial system. 1 acre = 4047 m² = 0.4047 hectares

Acreage: An area, measured in acres, that is subject to ownership or control by those holding total or fractional shares of working interests. Acreage is considered developed when development has been completed. A distinction may be made between "gross" acreage and "net" acreage
Gross - All acreage covered by any working interest, regardless of the percentage of ownership in the interest. **Net** - Gross acreage adjusted to reflect the percentage of ownership in the working interest in the acreage.

Acre-foot: The volume of water that will cover an area of 1 acre to a depth of 1 foot.

Acrylic Displays: Acrylic is a transparent thermoplastic that can be manufactured to various shapes and thicknesses. Because of its transparency and plastic properties, acrylic is a popular substitute for glass. One of the most popular commercial examples of acrylic is Plexiglas. Acrylic displays are cases and shelving units manufactured from acrylic and widely used in stores to display merchandise.

Acrylic Podiums: Acrylic is a transparent thermoplastic that can be manufactured to various shapes and thicknesses. Because of its transparency and plastic properties, acrylic is a popular substitute for glass. One of the most popular commercial examples of acrylic is Plexiglas. Acrylic is also used to manufacture podiums and lecterns - the stand used to support books or materials for speakers standing in front of an audience.

Acs, advanced communications service. : At&t's proposed packet-switched network.

ACSR: Aluminum Conductor Steel Reinforced.

ACSR : ACSR aluminum cable, steel-reinforced. A kind of overhead electric power conductor made up of a central stranded steel cable overlaid with strands of aluminum.

ACSR/AW: Aluminum Conductor, Aluminum Clad Steel Reinforced.

ACSR/TW: ACSR conductor made using Trapezoidal Wire construction.

ACSS: Aluminum Conductor Steel Supported. This is a conductor that is generally used for overhead transmission construction. ACSS is often preferred over ACSR because of its superior sag characteristics.

ACSS/AW: Aluminum Conductor, Aluminum Clad Steel Supported.

ACSS/TW: ACSS conductor made using Trapezoidal Wire construction.

Actinide: an element with atomic number of 89 (actinium) or above.

Action potential : Action potential a propagating change in the conductivity and potential across a nerve cell's membrane; a nerve impulse in common parlance.

Activation: The changing of the passive surface of a metal to a chemically active state. Contrast with passivation.

Activation function : Activation function in an artificial neural network, a function that maps the net output of a neuron to a smaller set of values. This set is usually T₀; 1U. Typical functions are the sigmoid function or singularity functions like the step or ramp.

Activation product: A radioactive isotope of an element (e.g., in the steel of a reactor core) which has been created by neutron bombardment.

Active contour : Active contour a deformable template matching method that, by minimizing the energy function associated with a specific model (i.e., a specific characterization of the shape of an object), deforms the model in conformation to salient image features.

Active device : Active device a device that can convert energy from a DC bias source to a signal at an RF frequency. Active devices are required in oscillators and amplifiers.

Active document: In the world wide web , a document executed at the local site using java.

active element : An element capable of generating electrical energy.

active filter: Any filter using an op amp is called an active filter.

Active filter : Active filter (1) a filter that has an en-ergy gain greater than one, that is, a filter that outputs more energy than it absorbs. (2) a form of power electronic converter designed to effectively cancel harmonic cur-rents by injecting currents that are equal and opposite to, or 180 out of phase with, the tar-get harmonics. Active filters allow the out-put current to be controlled and provide sta-ble operation against AC source impedance variations without interfering with the system impedance.

Active hub: Active hub that repeats or regenerates a signal. It functions as a repeater.

Active impedance : Active impedance the impedance at the input of a single antenna element of an ar-ray with all the other elements of the array excited.

Active learning : Active learning a form of machine learn-ing where the learning system is able to in-teract with its environment so as to affect the generation of training data.

Active load : Active load a transistor connected so as to replace a function that would conventionally be performed by a passive component such as a resistor, capacitor, or inductor.

Active logic : Active logic a digital logic that operates all of the time in the active, dissipative region of the electronic amplifiers from which it is constructed. The output of such a gate is determined primarily by the gate and not by the load.

Active Material (Battery): Material which reacts chemically to produce electrical energy when the cell discharges. The material returns to its original state during the charging process.

Active Material (Battery): The materials used in battery plates in active areas .these materials are capable of supporting fission chain reaction. For batteries may be plutonium and uranium.

Active mixer : Active mixer a mixer that uses three termi-nal devices such as FET rather than diodes as nonlinear element. One advantage of active mixers is that they can provide conversion gain.

Active network : Active network an electrical network that contains some solid state devices such as bipolar junction transistors (bjts) or metal-oxide-silicon field effect transistors (fets) operating in their active region of the volt-age vs. Current characteristic. To ensure that these devices are operating in the active re-gion, they must be supplied with proper DC biasing.

Active neuron : Active neuron a neuron with a non-zero output. Most neurons have an activation threshold. The output of such a neuron has zero output until this threshold is reached.

Active power: The component of electric power that performs work, typically measured in kilowatts (kW) or megawatts(MW). Also known as "real power." The terms "active" or "real" are used to modify the base term "power" to differentiate it from Reactive Power.

Active Power: A term used for power when it is necessary to distinguish among Apparent Power, Complex Power and its components, and Active and Reactive Power.

Active Power: Active power is a component of the alternating-current flow which represent

true work and expressed in watts

Active RC filter : Active RC filter an electronic circuit made up of resistors, capacitors, and operational amplifiers that provide well-controlled linear frequency-dependent functions, e.g., low-, high-, and bandpass filters.

Active redundancy : Active redundancy a circuit redundancy technique that assures fault-tolerance by detecting the existence of faults and performing some action to remove the faulty hardware, e.g., by standby sparing.

Active region : Active region semiconductor material doped such that electrons and/or holes are free to move when the material is biased. In the final fabricated device, the active regions are usually confined to very small portions of the wafer material.

Active solar: As an energy source, energy from the sun collected and stored using mechanical pumps or fans to circulate heat-laden fluids or air between solar collectors and a building.

Active solar heater: A solar water or space-heating system that moves heated air or water using pumps or fans.

Active-high : Active-high (1) a logic signal having its asserted state as the logic ONE state. (2) a logic signal having the logic ONE state as the higher voltage of the two states.

Active-low : Active-low (1) a logic signal having its asserted state as the logic ZERO state. (2) a logic signal having its logic ONE state as the lower voltage of the two states; inverted logic.

ActiveX Control (OLE Control): Custom control applet based on Microsoft's OLE architecture. Can run in any OLE-enabled container application or web browser. Address: Label or number identifying the memory location of a unit of information.

Actual peak reduction: The actual reduction in annual peak load (measured in kilowatts) achieved by customers that participate in a utility demand-side management (DSM) program. It reflects the changes in the demand for electricity resulting from a utility DSM program that is in effect at the same time the utility experiences its annual peak load, as opposed to the installed peak load reduction capability (i.e., potential peak reduction). It should account for the regular cycling of energy efficient units during the period of annual peak load.

Actuator: A device for converting hydraulic energy into mechanical energy, i.e., a motor or cylinder.

Actuator : Actuator (1) a transducer that converts electrical, hydraulic, or pneumatic energy to effective motion. For example in robots, actuators set the manipulator in motion through actuation of the joints. Industrial robots are equipped with motors that are typically electric, hydraulic, or pneumatic. See also industrial robot. (2) in computers, a device, usually mechanical in nature, that is controlled by a computer, e.g., a printer paper mechanism or a disk drive head positioning mechanism.

actuator : Mechanical part of a limit switch that uses mechanical force to actuate the switch contacts.

ACTV : ACTV See advanced compatible tele-vision.

Acuity : Acuity sharpness. The ability of the eye to discern between two small objects closely spaced, as on a display.

Acute Angle: An angle that is less than 90 degrees.

acute angle: An angle of less than 90o.

Adaptability : Adaptability the capability of a system to change to suit the prevailing conditions, especially by automatic adjustment of parameters through some initialization procedure or by training.

Adaptation layer : Adaptation layer control layer of a multi-layer controller, situated above the direct control layer and — usually — also above the optimizing control layer, required to introduce changes into the decision mechanisms of the layer (or layers) below this adaptation layer; for example adaptation layer of the industrial controller may be responsible for adjusting the model used by the optimizing control and the decision rules used by the direct (regulation) control mechanisms.

Adapter: A mechanical device used to align the shaft of an electric motor (or other rotary device) with the shaft of a hydraulic pump to maintain radial and parallel shaft alignment.

Adapter : Adapter a typical term from personal computers. A circuit board containing the interface toward an additional peripheral device. For example, a graphic adapter (interface boards like EGA, VGA, CGA), a game controller, a SCSI controller, a PCMCIA interface, etc.

Adaptive antenna : Adaptive antenna antenna, or array of antennas, whose performance characteristics can be adapted by some means; e.g., the pattern of an array can be changed when the phasing of each of the array elements is changed.

Adaptive array : Adaptive array an array that adapts itself to maximize the reception of a desired signal and null all interfering or jamming signals. This is achieved by finding the correct weights (input excitations) to the elements comprising the array.

Adaptive coding : Adaptive coding a coding scheme that adapts itself in some fashion to its input or output.

Adaptive coding of transform coefficients : Adaptive coding of transform coefficients coding technique that is carried out by threshold sampling and exploiting masking effects by variable quantization for different blocks. High detail blocks are coded with more quantization error than low detail blocks. This is done to take into account masking and boundary distortion effects. Transform coding becomes more attractive compared with DPCM when adaptive coding is used. The main drawback of adaptive transform coding is its sensitivity to transmission bit errors due to synchronization problems at the decoder.

Adaptive control : Adaptive control a control methodology in which control parameters are continuously and automatically adjusted in response to be measured/estimated process variables to achieve near-optimum system performance.

Adaptive critic : Adaptive critic learning technique where the system learns to evaluate the actions of a system (usually a controller) so as to provide a reinforcement signal that is an estimate of the future value of the system's current action.

Adaptive differential pulse code modulation (ADPCM) : Adaptive differential pulse code modulation (ADPCM) a modulation scheme in which only the difference between successive signal samples is encoded for transmission, and the quantization of the coding is adapted to the characteristics of the signal source.

Adaptive equalizer . : An equalizer that adjusts to meet varying line conditions; most operate automatically.

Adaptive filtering : Adaptive filtering a filtering strategy in which filter coefficients or governing parameters evolve over time according to some updating strategy to optimize some criterion.

Adaptive fuzzy system: Adaptive fuzzy system fuzzy inference system that can be trained on a data set through the same learning techniques used for neural networks. Adaptive fuzzy systems are able to incorporate domain knowledge about the target system given from human experts in the form of fuzzy rules and numerical data in the form of input-output data sets of the system to be modeled.

Adaptive manipulator controller: Adaptive manipulator controller a controller that uses an adaptation process which, based on observation of the manipulator position and velocity, readjusts the parameters in the nonlinear model until the errors disappear. An adaptive manipulator controller is depicted in the figure below. Such a system would learn its own dynamic properties. The adaptive manipulator control scheme presented in the figure belongs to the joint space control schemes.

Adaptive predictor : Adaptive predictor a digital filter whose coefficients can be varied, according to some error minimization algorithm, such that it can predict the value of a signal say N sampling time intervals into the future. The adaptive predictor is useful in many interference cancellation applications.

Adaptor, homing. : A device which, when used with an aircraft radio receiver, produced aural and/or visual signals which indicate the direction of a transmitting radio station with respect to the heading of the aircraft.

Adaptor, panoramic.: An attachment designed to operate with a search receiver to provide a visual presentation on an oscilloscope screen of a band of frequencies extending above and below the centre frequency to which the search receiver is tuned.

Adccp, advanced data communications control procedures. : The usa federal standard communications protocol.

ADCPM : ADCPM See adaptive differential pulse code modulation.

Add instruction : Add instruction a machine instruction that causes two numeric operands to be added together. The operands may be from machine registers, memory, or from the instruction it-self, and the result may be placed in a machine register or in memory.

Add/drop multiplexer: A SONET device that multiplexes signals from different sources or DE multiplexes a signal to multiple destinations.

Adder : Adder a logic circuit used for adding binary numbers.

Addition Agent: 1) Any material added to a charge of molten metal in bath or ladle to bring alloy to specifications, 2) reagent added to plating bath.

Additional facilities.: (in packet-switched networks). Standard network facilities which are selected for a given network but which may or may not be selected for other networks. Contrast with essential facilities.

Additive acousto-optic processing: Additive acousto-optic processing acoustooptic signal processing where the summation of acousto-optic modulated light waves is used to implement the signal processing operation.

Additive polarity : Additive polarity polarity designation of a transformer in which terminals of the same polarity on the low- and high-voltage coils are physically adjacent to each other on the transformer casing. With additive polarity, a short between two adjacent terminals results in the sum of the two coil voltages appearing between the remaining terminals.

Additive polarity is generally used for transformers up to 500kva and 34.5kv. Larger units use subtractive polarity. See the diagram below. See also subtractive polarity.

Additive white Gaussian noise (AWGN) : Additive white Gaussian noise (AWGN) the simplest form of channel degradation in a communication system in which the source of errors in the channel can be modeled as the addition of random noise with a Gaussian distribution and a constant (white) power spectrum. See also thermal noise.

address: The number that uniquely identifies the location of a word in memory. Adequacy is the ability of the electric system to supply the aggregate electric demand and energy requirements of the consumers at all times, taking into account scheduled and unscheduled outages of system facilities.

Address : Address a unique identifier for the place where information is stored (as opposed to the contents actually stored there). Most storage devices may be regarded by the user as a linear array, such as bytes or words in RAM or sectors on a disk. The address is then just an ordinal number of the physical or logical position. In some disks, the address may be compound, consisting of the cylinder or track and the sector within that cylinder. In more complex systems, the address may be a "name" that is more relevant to the user but must be translated by the underlying software or hardware.

Address (1). : (noun) a unique designation for the location of data or the identity of an intelligent device. Multiple devices on a single communications line must have unique addresses to allow each to respond to its own messages (see polling).

address (2). : (verb) to add or include the coded representation of the desired receiving device (as in to address a message).

Address (3). : A character or sequence of characters designating the terminal equipment which is the origin or destination of data being transmitted

Address bus : Address bus the set of wires or tracks on a backplane, printed circuit board, or integrated circuit to carry binary address signals between different parts of a computer. The number of bits of address bus (the width of the bus) determines the maximum size of memory that can be addressed. Modern microchips have 32 address lines, thus 4 giga-bytes of main memory can be accessed.

Address decoder : Address decoder logic that decodes an address A partial decoder responds to a small range of addresses and is used when recognizing particular device addresses on an I/O address bus, or when recognizing that addresses belong to a particular memory module.

Address designator. : A plain language name (full or abbreviated), routing indicator, call sign or address group of a unit, activity or other authority used to indicate the originator and/or addressee(s).

Address error : Address error an exception (error interrupt) caused by a program's attempt to access unaligned words or long words on a processor that does not accommodate such requests. The address error is detected within the CPU. This contrasts with problems that arise in accessing the memory itself, where a logic circuit external to the CPU itself must detect and signal the error to cause the CPU to process the exception. Such external problems are called bus errors.

Address field: A field containing the address of a sender or receiver.

Address field : Address field the portion of a program instruction word that holds an address.

Address group, collective. : An address group which represents two or more commands, authorities, activities, units or any combination thereof and includes the commander of the organisation or group and all subordinate commanders therein.

Address group. : A group of four letters assigned to represent command(s), authority(ies), activity(ies), unit(s) or geographic location(s); used primarily for the addressing of communications.

Address indicating group (aig). : An address group which represents a specific set of action and/or information addressees. Note: the identity of the originator may also be included.

Address locking : Address locking a mechanism to protect a specific memory address so that it can be accessed exclusively by a single processor.

Address map : Address map a table that associates a base address in main memory with an object (or page) number.

Address mapping : Address mapping the translation of virtual address into real (i.e., physical) addresses for memory access. See also virtual memory.

Address register : Address register a register used primarily to hold the address of a location in memory. The location can contain an operand or an executable instruction.

Address resolution protocol (ARP): In TCP/IP a protocol for obtaining the physical address of a node when the internet address is known.

Address space : Address space an area of memory seen or used by a program and generally managed as a continuous range of addresses. Many computers use separate address spaces for code and data; some have other address spaces for system. An address space is usually subject to protection, with references to a space checked for valid addresses and access (such as read only).

Address, multiple. : See message, multiple address.

Address, single. : See message, single address.

Addressee, action. : The activity or individual to whom a message is directed by the originator for action.

Addressee, information. : The activity or individual to whom a message is directed by the originator for information.

Addressee. : The activity or individual to whom a message is directed by the originator.

Addressing : Addressing (1) in processors: a mechanism to refer to a device or storage location by an identifying number, character, or group of characters. That may contain a piece of data or a program step.(2) in networks, the process of identifying a network component, for instance, the unique address of a node on a local area network.

Addressing fault : Addressing fault an error that halts the mapper when it cannot locate a referenced object in main memory.

Addressing mode : Addressing mode a form of specifying the address (location) of an operand in an instruction. Some of the addressing modes found in most processors are direct or register direct, where the operand is in a CPU register; register indirect (or simply indirect), where a CPU register contains the address of the operand in memory; immediate, where the operand is a part of the instruction. See also central processing unit.

Addressing range : Addressing range numbers that define the number of memory locations addressable by the CPU. For a processor with one address space, the range is determined by the number of signal lines on the address bus of the CPU.

Adequacy (electric): The ability of the electric system to supply the aggregate electrical demand and energy requirements of the end-use customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements. NERC definition

Adequate service : Adequate service in terms of the blocking probability, term associated with a fixed blocking. A typically quoted value may be 2. See also blocking.

adiabatic: process taking place without heat entering or leaving the system.

Adiabatic : Adiabatic a system that has no heat transfer with the environment.

Adiabatic passage : Adiabatic passage a technique for the creation of a long-lived coherence in a quantum mechanical system by manipulating electro-magnetic field intensities so that the system always remains in an eigenstate. In practice, this involves changing field strengths on a time scale slower than the inverse of the energy spacing between relevant eigenstates of the system. For example, consider a lambda system in which only one field is present initially and all population starts out in the uncoupled ground state. If a field is gradually turned on to couple this initial state to the excited state, the system can remain transparent by evolving in such a way that it is always mathematically equivalent to the dark state that would be produced by coherent population trapping. Adiabatic passage is often used for selective transfer of population between two long-lived states of a multistate system, especially in cases where the two-step process of absorption followed by spontaneous decay (optical pumping) would tend to populate many other states.

Adjacency graph : Adjacency graph a graph in which each node represents an object, component, or feature in an image. An edge between two nodes indicates two components that are touching or connected in the image.

Adjacent channel interference (ACI) : Adjacent channel interference (ACI) the interference caused by an adjacent frequency band, e.g., in a system with frequency division duplex (FDD). Classified as either in-band or out-of-band adjacent channel interference (ACI). The in-band ACI occurs when the center frequency of interfering signal falls within the band of the desired signal. The out-of-band ACI occurs when the center frequency of interfering signal falls outside the bandwidth of the desired signal.

Adjacent channel reuse ratio (ACRR) : Adjacent channel reuse ratio (ACRR) the reuse ratio between radio communication cells using adjacent radio channels. See also reuse ratio.

Adjacent channels : Adjacent channels radio channels occupying radio frequency allocations n and $n + 1$.

Adjoint network : Adjoint network a network with an identical structure to the original one, but with possibly different elements. As an exam-

Adjustable speed drives: Drives that save energy by ensuring the motor's speed is properly matched to the load placed on the motor. Terms used to describe this category include polyphase motors, motor oversizing, and motor rewinding.

Adjusted electricity: A measurement of electricity that includes the approximate amount of energy used to generate electricity. To approximate the adjusted amount of electricity, the site-value of the electricity is multiplied by a factor of 3. This conversion factor of 3 is a rough approximation of the Btu value of raw fuels used to generate electricity in a steam-generation power plant.

Adjustment: The operation intended to bring a transducer into a state of performance suitable for its use.

Adjustment: Adjustment is a method or model of solution of an over determined system of equations. Adjustment can be any manner in engineering like adjustment of tappets of an engine or adjustment in speed of a machine.

Adjustment bid: A bid auction conducted by the independent system operator or power exchange to redirect supply or demand of electricity when congestion is anticipated.

Administrative and general expenses: Expenses of an electric utility relating to the overall directions of its corporate offices and administrative affairs, as contrasted with expenses incurred for specialized functions. Examples include office salaries, office supplies, advertising, and other general expenses.

Admittance: The reciprocal of Impedance ($1/Z$).

admittance: Reciprocal of impedance. Ratio of the electric current to the voltage. [Unit siemens or S]

Admittance: Ease of flow of current from a circuit .it is defined as the inverse of impedance. The SI unit of admittance is the Siemens (symbol S).The term admittance was given by Oliver Heaviside.

ADPCM : ADPCM See adaptive differential pulse code modulation.

ADSL: Asymmetric Digital Subscriber Line. ADSL uses standard phone lines to provide high speed data communications. ADSL upstream speeds (from the user) normally top out at 128Kbps and downstream (to the user) at no more than 1.5Mbps. A separate phone line i

ADSL : ADSL See asymmetric digital subscriber line.

Adsorbent : Adsorbent the material of an adsorber, for example, silica gel, alumina, and char-coal. Adsorbent materials are characterized by high surface to volume ratio.

Adsorber : Adsorber (1) condensation of a gas on the solid material. (2) material that attracts and holds (by Van der Waal forces) molecular layers of dense gases (i.e., very near condensation temper-atures) on porous high surface/volume ratio materials.

Advance royalty: A royalty required to be paid in advance of production from a mineral property that may or may not be recoverable from future production.

Advanced digital television (ADTV) : Advanced digital television (ADTV) a high definition television (HDTV) digital transmission television system was proposed to the Federal Communications Commission by the Advanced Television Research Con-sortium. The ADTV system introduced a layered system to separately describe the dig-ital transmission system, the video compres-sion system, and the data packet transport system. The video compression method uses a MPEGCC standard that provides for com-patibility with multimedia computing. See Advanced Television Research Consortium.

Advanced mobile phone system (AMPS) : Advanced mobile phone system (AMPS) a standard for a cellular radio communi-cations network originally developed in the 1970s by AT&T and later adopted as an in-dustry standard by the U.S.-based Telecom-munications Industries Association (TIA). It is the first cellular standard widely deployed in North America. It is also referred to as the analog cellular system. Frequency modula-tion with 30 khz channels is used.

Advanced Research Project Agency (ARPA): The government agency that funded ARPANET.

Advanced Research Project Agency Network (ARPANET): The packet-switching network that was funded by ARPA.

Advances from municipality: The amount of loans and advances made by the municipality or its other departments to the utility department when such loans and advances are subject to repayment but not subject to current settlement.

Advances to municipality: The amount of loans and advances made by the utility department to the municipality or its other departments when such loans or advances are subject to current settlement.

Adverse water conditions: Reduced stream flow, lack of rain in the drainage basin, or low water supply behind a pondage or reservoir dam resulting in a reduced gross head that limits the production of hydroelectric power or forces restrictions to be placed on multipurpose reservoirs or other water uses.

Adverse Weather Conditions: Reduced streamflow, lack of rain in the drainage basin, or low water supply behind a pondage or reservoir dam resulting in a reduced gross head that limits the production of hydroelectric power or forces restrictions to be placed on multipurpose reservoirs or other water uses.

AEIC: Association of Edison Illuminating Companies.

Aeolian Vibration: A natural forced vibration caused by wind flowing over a conductor. This occurs at alternate wind induced vortices and at wind speeds typically at 8 to 12 MPH. Contact Young & Company for additional information including the formula to calculate Aeolian

Aeolian vibration : Aeolian vibration a high-frequency me-chanical vibration of electric power lines caused by wind.

Aeration: Air trapped in the hydraulic fluid. Excessive aeration causes the fluid to appear milky and components to operate erratically.

Aerators: Any device used to introduce air into another medium. In fluid flow applications, such as a water faucet, an aerator is created with a screen to break the fluid stream into a stream of individual droplets. In landscaping, an aerator is a piece of machinery that uses tubes or tines to remove dirt from the ground, thereby created air pockets in the dirt and reducing compaction.

Aerial Bundle: Aerial Bundle Conductor is the term used to describe conductor bundles such as overhead power lines. The bundle is made up of multiple individual phase conductors bundled tightly together with a bare neutral conductor. Aerial bundle conductors are typically used in low voltage applications - less than 1000 volts. The tight spacing of the conductors and the absence of air pockets results in reduced transmission losses.

Aerial Cable: An assembly of insulated conductors installed on a pole or similar overhead structures. It may be self supporting or attached to a messenger cable.

Aerial Cable: The Insulated cable usually containing all conductors which are required for telecommunication line or electrical transmission lines with voltages below 1000 volts

Aerial cable : Aerial cable any fully-insulated electric power cable which is carried overhead upon poles, as opposed to the use of the more usual overhead bare conductors.

Transformation including one or more translations, rotations, scales, and shears that is represented by a 4 4 matrix allowing multiple geometric transformations in one transform step. Affine transformations are purely lin-ear and do not include perspective or warping transformations.

aerodynamics: Study of air moving around solid objects, or air flowing around a stationary structure.

Aeronautical mobile-satellite service. : An aeronautical mobile-satellite service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.

AFCI: Arc Fault Circuit Interrupter

AFD: Adjustable Frequency Drive

Affected employee: An employee whose job requires him or her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him or her to work in an area in which such servicing or maintenance is being performed.

Affiliate: - An entity that is directly or indirectly owned, operated, or controlled by another entity.

Affiliate: An entity which is directly or indirectly owned, operated, or controlled by another entity. See Firm.

Afforestation: Planting of new forests on lands that have not been recently forested.

AFI: Arc Fault Interrupter

AFS Tests: A number of standard tests determined by American Foundrymen's Society to evaluate molding and core sands.

Aftermarket converted vehicle: A standard conventionally fueled, factory-produced vehicle to which equipment has been added that enables the vehicle to operate on alternative fuel.

Aftermarket vehicle converter: An organization or individual that modifies OEM vehicles after first use or sale to operate on a different fuel (or fuels).

AFUDC: Allowance for Funds Used During Construction

AFV: Alternative-Fuel Vehicle

AGA: American Gas Association

AGC : AGC See automatic gain control or automatic generation control.

Agent: A router or a host that runs the SNMP server program.

Agent : Agent a computational entity that acts on behalf of other entities in an autonomous fashion.

Agent-based system : Agent-based system an application whose component are agents. See also agent.

Agglomerating: refers to coal that softens when heated and forms a hard gray coke; this coal is called caking coal. Not all caking coals are coking coals. The agglomerating value is used to differentiate between coal ranks and also is a guide to determine how a particular coal reacts in a furnace.

Agglomerating character: Agglomeration describes the caking properties of coal.

Agglomerating character is determined by examination and testing of the residue when a small powdered sample is heated to 950 degrees Centigrade under specific conditions. If the sample is "agglomerating," the residue will be coherent, show swelling or cell structure, and be capable of supporting a 500-gram weight without pulverizing.

Agglomerating Processes: Fine particles of limestone (flux) and iron ore are difficult to handle and transport because of dusting and decomposition, so the powdery material usually is processed into larger pieces. The raw material's properties determine the technique that is used by mills. 1) SINTER Baked particles that stick together in roughly one inch chunks. Normally used for iron ore dust collected from the blast furnaces. 2) PELLETS Iron ore or limestone particles are rolled into little balls in a balling drum and hardened by heat. 3) BRIQUETTES Small lumps are formed by pressing material together. Hot Iron Briquetting (HBI) is a concentrated iron ore substitute for scrap for use in electric furnaces.

Agglutinating: refers to the binding qualities of a coal. The agglutinating value is an indication of how well a coke made from a particular coal will perform in a blast furnace. It is also called a caking index.

Aggregate input rate. : The sum of all data rates of the terminals or computer ports connected to a multiplexor or concentrator; burst aggregate input rate refers to the instantaneous maximum.

Aggregate ratio: The ratio of two population aggregates (totals). For example, the aggregate expenditures per household is the ratio of the total expenditures in each category to the total number of households in the category.

Aggregation : Aggregation an operation performed on system variables whose purpose is to collect them in a way enabling order and/or uncertainty reduction. For linear systems both continuous time and discrete-time state aggregation is obtained by linear transformation of the original state represented by an aggregation matrix G endowed with the following properties where A ; B ; C are original system matrices (respectively state, input, and output ones) and A ; B ; C are aggregated system matrices. The aggregation is an eigenvalues-preservation approach and it provides order reduction by neglecting some of the system modes.

Aggregator: Any marketer, broker, public agency, city, county, or special district that combines the loads of multiple end-use customers in negotiating the purchase of electricity, the transmission of electricity, and other related services for these customers.

Agitators: A mechanical device used to mix, stir, or shake a mixture of components. Agitators can be used in small-scale devices such as washing machines or at much larger scales in industrial mixing tanks. The agitator motion is typically rotational or oscillatory.

AGM: See "Absorbed Glass Mat"

AGM: Absorbed glass mat

Agriculture: An energy-consuming subsector of the industrial sector that consists of all facilities and equipment engaged in growing crops and raising animals.

Agriculture, mining, and construction (consumer category): Companies engaged in agriculture, mining (other than coal mining), or construction industries.

A-H: AmpereHour

AIC: Arc Interrupting Current

Aided tracking.: A system of tracking a target in azimuth, elevation or range, or all three variables together, in which a constant rate of motion of the tracking mechanism is maintained.

Aiken, Howard Hathaway : Aiken, Howard Hathaway (1900–1973) Born: Hoboken, New Jersey, U.S.A. Aiken is best known as the inventor of the Mark I and Mark II computers. While not commercially successful, these machines were significant in the development of the modern computer. The Mark I was essentially a mechanical computer. The Mark II was an electronic computer. Unlike UNI-VAC (See Eckert, John Presper) these machines had a stored memory. Aiken was a professor of mathematics at Harvard. He was given the assignment to develop these computers by the Navy department. Among his colleagues in this project were three IBM scientists and Grace Hopper. It was while working on the Mark I that Grace Hopper pulled the first “bug” from a computer.

Air Blast Breakers: A variety of high voltage circuit breakers that use a blast of compressed

air to blowout the arc when the contacts open. Normally, such breakers only were built for transmission class circuit breakers.

Air bridge : Air bridge a bridge made of metal strip suspended in air that can connect components on an integrated circuit in such a way as to cross over another strip. Air bridges are also used to suspend metalization in spiral induc-tors off of the semi-conducting substrate in a way that can lead to improved performance in some cases.

Air capacitor : Air capacitor a fixed or variable capacitor in which air is the dielectric material between the capacitor's plates.

Air Circuit Breakers: These are used to interrupt circuits while current flows through them. Compressed air is used to quench the arc when the connection is broken.

Air cleaner: A device using filters or electrostatic precipitators to remove indoor-air pollutants such as tobacco smoke, dust, and pollen. Most portable units are 40 watts when operated on low speed and 100 watts on high speed.

Air collector: A medium-temperature collector used predominantly in space heating, utilizing pumped air as the heat-transfer medium.

Air conditioning: Cooling and dehumidifying the air in an enclosed space by use of a refrigeration unit powered by electricity or natural gas. Note Fans, blowers, and evaporative cooling systems ("swamp coolers") that are not connected to a refrigeration unit are excluded.

air conditioning: The control of temperature, humidity and the purity of the air. In tropical countries like Sri Lanka, air conditioning only cools the air and not heats it, but in cold countries both modes are available.

Air conditioning intensity: The ratio of air-conditioning consumption or expenditures to square footage of cooled floor space and cooling degree-days (base 65 degrees F). This intensity provides a way of comparing different types of housing units and households by controlling for differences in housing unit size and weather conditions. The square footage of cooled floor space is equal to the product of the total square footage times the ratio of the number of rooms that could be cooled to the total number of rooms. If the entire housing unit is cooled, the cooled floor space is the same as the total floor space. The ratio is calculated on a weighted, aggregate basis according to this formula $\text{Air-Conditioning Intensity} = \text{Btu for Air Conditioning} / (\text{Cooled SquareFeet} * \text{Cooling Degree-Days})$

Air Core Inductor: An inductor is an electrical component used to store the energy resulting from current passing through it in a magnetic field. An inductor is made by wrapping a conducting wire into a coil around a central core, with each turn of the wire termed a winding. The number of windings in the coil is directly related to the inductance. Air core inductors use either non-magnetic coils or no coil at all instead of a ferromagnetic coil. The use of an air core ensures a lower peak inductance, but also reduces the energy losses associated with ferrite inductors. The lack of core losses allows air core inductors to be operated at high frequencies.

Air core transformer: Air core transformer two or more coils placed so that they are linked by the same flux with an air core. With an air core the flux is not confined.

Air Cylinder: An air cylinder is the housing component of what is also referred to as a piston assembly or pneumatic cylinder. In this device, compressed gas is injected into the air cylinder, causing a piston to move as a result of the pressure on the face of the piston. The piston then delivers a force through the piston rod to the object being controlled.

Air Diffuser:

Air Diffusion Aerators: Air driers are a general class of devices used to extract moisture from compressed air lines. The purpose of these devices is to prevent condensation in the air lines and to deliver dry compressed air for applications where moisture is problematic. Air driers work by lowering the pressure dew point of the compressed air to a lower temperature than will be seen by the air compressor equipment.

Air Driers: Air driers are a general class of devices used to extract moisture from compressed air lines. The purpose of these devices is to prevent condensation in the air lines and to deliver dry compressed air for applications where moisture is problematic. Air driers work by lowering the pressure dew point of the compressed air to a lower temperature than will be seen by the air compressor equipment.

Air Driven Pumps: A pump is a mechanical device used to drive a fluid or gas from one place to another. Air driven pumps use a reservoir of air, usually in a tank, and a hydraulic system to operate the pump. Air driven pumps come in many different designs and are used across many different industries. Air driven pumps are positive displacement pumps, such as a piston and diaphragm pumps.

Air Hammer: Air hammers are pneumatic-driven versions of a hammer device in which compressed air is used to deliver the hammer blow to the surface of interest. Air hammers often deliver several thousand blows per second with delivered pressure on the order of tens of pounds per square inch (psi). Air hammers also come with a variety of hammer and chisel tips, enabling the tool to be used for various shaping or cutting operations.

Air Heaters: Bank of boiler tubes located in the exhaust gas ductwork which preheats the incoming combustion air by transferring heat from the exhaust gases passing through them to the incoming air passing around them. Preheating the air reduces boiler fuel requirements.

Air ionization chamber : Air ionization chamber a device used to monitor neutron flux.

Air Knife: An air knife is a pneumatic device that delivers a high-speed sheet of air through a line of exit holes. Air knives are often used in industrial operations for the purpose of air cleaning a surface and can be stationary or moving. Depending on the speed and pressure of the air sheet, air knives can be used for gentle applications such as hand drying to more aggressive applications such as air blasting.

Air Lift Hammer: A type of gravity drop hammer where the ram is raised for each stroke by an air cylinder. Because length of stroke can be controlled, ram velocity and thus energy delivered to the workpiece can be varied.

Air Lift Pumps: This type of pump can lift 20 to 2000 gallons per minute, up to about 750 feet. The discharge pipe must be placed deep into the water, from 70% of the height of the pipe above the water level (for lifts to 20 feet) down to 40 percent for higher lifts.

Air line : Air line a coaxial transmission line in which the volume between the inner and outer conductors are air-filled.

Air mass: The ratio of the mass of atmosphere in the actual observer-sun path to the mass that would exist if the observer was at sea level, at standard barometric pressure, and the sun was directly overhead. Note (sometimes called air mass ratio).

Air mass 1.5 (AM1.5) standard reference spectrum: The solar spectral irradiance distribution (diffuse and direct) incident at sea level on a sun-facing 37-degree tilted surface. The atmospheric conditions for AM1.5 are precipitable water vapor, 14.2 mm; total ozone, 3.4

mm; turbidity (base e, $\lambda=0.5$ mm), 0.27. [ASTM E 892, Table 2]

Air pollution abatement equipment: Equipment used to reduce or eliminate airborne pollutants, including particulate matter (dust, smoke, fly, ash, dirt, etc.), sulfur oxides, nitrogen oxides (NO_x), carbon monoxide, hydrocarbons, odors, and other pollutants. Examples of air pollution abatement structures and equipment include flue-gas particulate collectors, flue-gas desulfurization units and nitrogen oxide control devices.

Air Pressure Meters: Air pressure meters are measurement devices used to report absolute and/or differential air pressure. The output of the meters are typically delivered in a number of standard units including psi, mm HG, inches of H₂O, millibars, and bars. Air pressure meters almost always include two ports - one to measure the air pressure of interest and one to provide a reference pressure, whether ambient air pressure or otherwise.

Air Pressure Relief Valve: An air pressure relieve valve is a safety device used to protect compressed air lines from building up pressure to failure levels. The relief valve is designed with a seal that automatically releases when a pre-determined pressure is achieved. This valve allows an air system to self-regulate any pressure build-up in the system and is used in nearly all compressed air systems and pneumatic tools.

Air Pressure Switch: An air pressure switch is an automatic switching mechanism often found in compressed air systems and pneumatic tools. The switch is designed such that when a predetermined pressure is reached, the switch is displaced and the electrical circuit is open or closed. This type of switch is utilized in air compressors to automatically start the compression cycle whenever the tank pressure drops below the set pressure of the compressor.

Air Purge:

Air Quenching: Accelerated cooling of alloy in an air stream from temperatures above the Ac₃ temperature.

Air Receivers: An air receiver is a component of air compression systems used to help regulate the impact of the compression process on the delivered air. The air receiver is essentially a tank which allows for the free expansion of the compressed air prior to its release through the pressure valve and to the delivery system. The use of an air receiver helps to regulate the process by equalizing the pressure variation caused by on/off compression cycles.

Air Scale: Scale left on ferrous metal in processing, usually from heating in presence of air.

Air Scrubbers: Air scrubbers cover a wide range of devices used to regulate air quality in a given area. An air scrubber typically uses multiple filtration processes and cycles to remove dust, pollutants, allergens, and other micro-particles from the air. Depending on the design, air scrubbers can also be used to remove potentially harmful gases from the air prior to returning it to the controlled environment.

Air Separator: An air separator is a device used to remove air from a fluid piping system. The separator is placed inline with the piping system and can be used to trap and remove bubbles and pockets of free air, delivering out of the exit a more uniform fluid. Use of an air separator typically improves the efficiency of the system and helps to extend the life of the system components.

air standardization coordinating committee (ascc). : An organization, which focuses on standards and common procedures to help air forces of australia, canada, new zealand, the

united kingdom and the united states (including navy and marine aviation) to operate effectively as airmen in joint and combined operations.

Air surveillance. : The systematic observation of air space by electronic, visual or other means, primarily for the purpose of identifying and determining the movements of all aircraft and large missiles, friendly or enemy, in the air space under observation.

Air terminal : Air terminal a lightning rod; any device which extends upward into the air from a structure for purposes of lightning protection.

Air Valve : An air flow control valve is a mechanical device used to regulate the flow of air through a system. The control valve can be used to regulate the volume of air moving through the system. It can also be used to split or divert the air into one or more paths. The design and specifications of air flow control valves vary widely based on the application.

Air Velocity Meters: Air velocity meters are measurement devices used to report the speed of the air connected to the device. Air velocity meters are typically of two types - vane anemometers or pressure-based measurement systems. In vane anemometers the airflow spins a fan wheel and the resulting rotational speed is converted to an airflow measurement. The airflow measurement can be volumetric, such as cubic feet per minute (CFM), or can be converted to an air speed based on the known flow area. In a pressure-based measurement system, the pressure and temperature of the airflow is measured by the device and the ideal gas law is used to convert these parameters to a corresponding air speed.

Air-blast circuit breaker : Air-blast circuit breaker a circuit breaker in which the arc which forms between the contacts on opening is extinguished with a blast of high-pressure air.

Airborne early warning (aew). : The detection of enemy air or surface units by radar or other equipment carried in an airborne vehicle and the transmitting of a warning to friendly units.

Aircraft control and warning system. : A system established to control and report the movement of aircraft. It consists of observation facilities (radar, passive electronic, visual or other means), control centres and necessary communications.

Aircraft to surface vessel. : Radar to detect surface targets from aircraft.

Air-gap line : Air-gap line the line that is obtained by continuing the linear portion of the saturation curve of a synchronous machine or a DC machine. The figure shows a plot of generated voltage vs. Field current at constant machine speed. Initially, an increase in field current yields a linear increase in the generated voltage, but as the iron becomes saturated, the voltage rolls off. The air-gap line gives the Plot of generated voltage vs. Field current at constant machine speed.

Air-gap voltage : Air-gap voltage the internal voltage of a synchronous machine that is generated by the air gap flux. Also referred to as the voltage behind leakage reactance.

Airline : Airline a precision coaxial transmission line with air dielectric used in a variety of calibration techniques and measurements as an impedance standard and to establish a reference plane.

Airy disk : Airy disk the central portion of the far-field optical diffraction pattern.

AIS: Air Insulated Switchgear

Al: The chemical symbol for aluminum.

Al clad: Composite sheet produced by bonding either corrosion resistant aluminum alloy or aluminum of high purity to base metal of structurally stronger aluminum alloy. The coatings

are anodic to the core so they protect exposed areas of the core electrolytically during exposure to corrosive environment.

ALARA: As Low As Reasonably Achievable, economic and social factors being taken into account. This is the optimization principle of radiation protection.

Alarm: A signal for attracting attention to some abnormal event.

Alarm: Alarm is an anxious awareness of danger. So in every machines some alarming systems are provide to prevent users and machines from accidents.

Alarm indication signal (ais). : A signal that is used to replace the normal traffic signal when a maintenance alarm indication has been activated. Generally all binary '1's.

Albedo : Albedo the ratio between the total scat-tered intensity and the whole extracted from the incident light by scattering and absorp-tion.

Alcohol: The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; $\text{CH}_3\text{-(CH}_2\text{)}_n\text{-OH}$ (e.g., methanol, ethanol, and tertiary butyl alcohol).

algebraic sum: Total of a number of quantities of the same kind, with due regard to sign.

algorithm: A systematic mathematical procedure which enables a problem to be solved in a definite number of steps.

Algorithm : Algorithm (1) a systematic and precise, step-by-step procedure (such as a recipe, a program, or set of programs) for solving a certain kind of problem or accomplishing a task, for instance converting a particular kind of input data to a particular kind of output data, or controlling a machine tool. An algo-rithm can be executed by a machine.(2) in image processing, algorithms can be either sequential, parallel, or ordered. In se-quential algorithms, pixels are scanned and processed in a particular raster-scan order. As a given pixel is processed, all previously scanned pixels have updated (processed) val-ues, while all pixels not yet scanned have old (unprocessed) values. The algorithm's result will in general depend on the order of scan-ning. In a parallel algorithm, each pixel is pro-cessed independently of any changes in the others, and its new value is written in a new image, such that the algorithm's result does not depend on the order of pixel processing. In an ordered algorithm, pixels are put in an ordered queue, where priority depends on some value attached to each pixel. At each time step, the first pixel in the queue is taken out of it and processed, leading to a possi-ble modification of priority of pixels in the queue. By default, an algorithm is usually considered as parallel, unless stated other-wise.

Alias: A false lower frequency component that appears in sampled data acquired at too low a sampling rate.

Aliasing: In sound and image generation distortion of a reproduced image so that curved or inclined lines appear inappropriately jagged edges and buzz sound, because of the mapping of a number of points to the same pixel.

Aliasing : Aliasing (1) in signal processing, distor-tion introduced in a digital signal when it is undersampled. In all digital systems the signals should be filtered before they are sampled to eliminate signal components with frequencies above the Nyquist frequency, $f_N = \frac{1}{2T}$;where T is a sampling time, are eliminated. If this filtering is not done, signal components with frequencies $f > f_N$ will appear as low-frequency components with the frequency $f_A = f - f_N$ The prefilters introduced before a sampler are called

anti-aliasing filters (common choices are second- or fourth-order Butterworth, integral time absolute error (ITAE), or Bessel filters). In computer graphics, distortion due to the discrete nature of digital images that causes straight lines to appear jagged. In computer software, a single object having two different identities, such as names in memory space. Aliasing can make it difficult to determine whether two names (or access paths to reach an object) that appear to be different really access the identical object; a system designed to find parallelism when two accesses really reach different objects will have trouble achieving correct (functional) operation if aliasing is present.

Align: To adjust or set to a line or center.

Alignment : Alignment (1) the requirement that a datum (or block of data) be mapped at an address with certain characteristics, usually that the address modulo the size of the datum or block be zero. For example, the address of a naturally aligned long word is a multiple of four.

ALJ: Administrative Law Judge

alkaline: Containing an excess of hydroxyl ions over hydrogen ions.

Alkaline Derusting: An electrical process for derusting steel, cast iron and other ferrous alloys without using heat.

Alkyd: A type of resin made from a polyhydroxy alcohol combined chemically with the acids of various oils. They are particularly adapted for use where hardness and high gloss are required. Used largely for outside decoration.

Alkylate: The product of an alkylation reaction. It usually refers to the high-octane product from alkylation units. This alkylate is used in blending high octane gasoline.

Alkylation: A refining process for chemically combining isobutane with olefin hydrocarbons (e.g., propylene, butylene) through the control of temperature and pressure in the presence of an acid catalyst, usually sulfuric acid or hydrofluoric acid. The product alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the antiknock value of the fuel.

All-digital synchronization: All-digital synchronization synchronization algorithm, where the analog-to-digital conversion takes place as early as possible to assist digital implementation of the synchronizer. In most cases, an all-digital synchronization approach leads to optimal maximum likelihood algorithms.

All-electric home: A residence in which electricity is used for the main source of energy for space heating, water heating, and cooking. Other fuels may be used for supplementary heating or other purposes.

Alley Arm: A side brace for a cross arm that is not loaded (balanced) evenly.

Alley arm : Alley arm a crossarm meant for use in an alleyway or other confined area in which poles must be placed close to buildings. See crossarm.

Alley Roadway (Lighting): Narrow public ways within a block, generally used for vehicular access to the rear of abutting properties.

Alligator: A specialized tool attached to a hot stick used to tie a wire or cable into an insulator.

Alligator clips: The spring loaded clips for creating temporary electrical connection are known as alligator clips.

Allocate : Allocate to create a block of storage of a given size in some memory, which is not to be used for any other purpose until expressly freed.

Allocated.: In reference to a circuit or channel, indicates the exclusive use by one or more specified authorities.

Allocation : Allocation the act of allocating. See also allocate.

Allocation (of a frequency band).: Entry in the table of frequency allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radio communications services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned.

All-optical switch : All-optical switch an optically addressed device whose optical transmission can be switched between two possible states by changes in the incident optical power.

All-or-Nothing Relay: An electrical relay which is intended to be energized by a quantity, whose value is either higher than that at which it picks up or lower than that at which it drops out.

Allotment (of a radio frequency or radio frequency channel). : Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space telecommunication service in one or more identified countries or geographical areas and under specified conditions.

Alloy: A metal formed by the combination of two or more metals.

alloy: A composition of two or more metals.

All-pass system : All-pass system a system with unit magnitude and poles and zeroes that are complex conjugate reciprocals of each other. An all-

Almost sure convergence: Almost sure convergence for a stochastic process, the property of the sample values converging to a random variable with probability one (for almost all sample paths).

Alnico : Alnico a permanent magnet material consisting mainly of aluminum, nickel, cobalt, and iron, which has a relatively low-energy product and high residual flux density. An alnico is most suitable for high-temperature applications.

ALOHA : ALOHA a random access, multiple access protocol, originally developed by Norman Abramson at the University of Hawaii in 1970. A given user transmits a message when the message is generated without regard for coordination with the other users sharing the channel. Messages involved in collisions are retransmitted according to some retransmission algorithm. Literally, "aloha" is a greeting in the Hawaiian native language.

Alpha Brass: A copper zinc alloy containing up to 38% of zinc. Used mainly for cold working.

Alpha Bronze: A copper tin alloy consisting of the alpha solid solution of tin in copper. Commercial forms contain 4 or 5% of tin. This alloy is used in coinage, springs, turbine, blades, etc,

Alpha channel : Alpha channel a grayscale image associated with the color channels of an image that dictates the opacity/transparency of the corresponding color channel pixels. If the color channels are multiplied by the alpha channel when stored, the image is referred to as premultiplied; otherwise, it is known as unpremultiplied.

Alpha Ferrite: Body centered cubic type of pure iron stable below 1670F (910C).

Alpha Martensite: A form or stage of martensite of somewhat arbitrary distinction, probably representing the least developed and most distorted stage in the transformation of austenite to

martensite at ordinary temperatures.

Alpha particle: A positively-charged particle from the nucleus of an atom, emitted during radioactive decay. Alpha particles are helium nuclei, with 2 protons and 2 neutrons.

Alpha particle : Alpha particle a subatomic particle emitted by ceramic packaging materials that causes soft errors in memory integrated circuits.

Alpha Process: A shell molding and core making method in which a thin resin bonded shell is baked with a less expensive, highly permeable material.

Alphabet.: A table of correspondence between a set of characters and the signals which represent them. As in international alphabet number 5.

Alpha-cut : Alpha-cut the set of all crisp, or nonfuzzy, elements whose membership function in A is greater than or equal to a given value, .

alphanumeric: The collection of numbers, alphabetic characters and symbols.

Alphanumeric. : Describing a character set that contains letters, numerals (digits), and other characters such as punctuation marks.

Alternate energy source for primary heater: The fuel that would be used in place of the usual main heating fuel if the building had to switch fuels. (See Fuel-Switching Capability.)

Alternate mark inversion (AMI): A digital-to-digital bipolar encoding method in which the amplitude representing 1 alternates between positive and negative voltages.

Alternate mark inversion (ami). : A pseudo-ternary signal, conveying binary digits, in which successive 'marks' are normally of alternating positive and negative polarity but equal in amplitude and in which 'space' is of zero amplitude.

alternate routing (1).: A method of completing calls that uses another path when the primary circuit is unavailable, out of service or busy.

alternate sweep: A vertical mode of operation for a dual-trace oscilloscope. The signal from the second channel is displayed after the signal from the first channel. Each trace has a complete trace, and the display continues to alternate.

Alternate. : A method for varying the route of the traffic in a network in the event of circuit failure or to optimise loading and use of channels.

Alternating Current: An electric current that reverses direction at regular intervals, having a magnitude that varies continuously in a sinusoidal manner.

Alternating current: Electric current in which the direction of flow is reversed at frequent intervals usually 100 or 120 times per second (50 or 60 cycles per second or 50//60 Hz).

Alternating Current (ac): An electric current that reverses its direction at regularly recurring intervals.

Alternating Current (ac): Current from a power source that changes polarity periodically.

Alternating current (AC): An electric current that reverses its direction at regularly recurring intervals.

alternating current, ac: A current whose instantaneous values reverses in regularly recurring intervals of time and which has alternative positive and negative values, the cycle being repeated continuously. The term is commonly used to refer to sinusoidal waveforms.

Alternating Stress: Stress produced in a material by forces acting alternating in opposite directions.

Alternative fuel vehicle converter: An organization (including companies, government agencies and utilities), or individual that performs conversions involving alternative fuel

vehicles. An AFV converter can convert (1) conventionally fueled vehicles to AFVs, (2) AFVs to conventionally fueled vehicles, or (3) AFVs to use another alternative fuel.

Alternative fuels: Solid fuels such as municipal solid waste (MSW), refuse derived fuel (RDF), biomass, rubber tires, and other combustibles that are used instead of fossil fuels (gas, oil, or coal) in a boiler to produce steam for the generation of electrical energy.

Alternative routing (2). : A method of routing traffic in which, when a call cannot be connected to a free circuit on the normal route, it is directed to an alternative route, either automatically or by an operator..

Alternative-fuel vehicle (AFV): A vehicle designed to operate on an alternative fuel (e.g., compressed natural gas, methane blend, electricity). The vehicle could be either a dedicated vehicle designed to operate exclusively on alternative fuel or a nondedicated vehicle designed to operate on alternative fuel and/or a traditional fuel.

Alternative-rate DSM program assistance: A DSM (demand-side management) program assistance that offers special rate structures or discounts on the consumer's monthly electric bill in exchange for participation in DSM programs aimed at cutting peak demands or changing load shape. These rates are intended to reduce consumer bills and shift hours of operation of equipment from on-peak to off-peak periods through the application of time-differentiated rates. For example, utilities often pay consumers several dollars a month (refund on their monthly electric bill) for participation in a load control program. Large commercial and industrial customers sometimes obtain interruptible rates, which provide a discount in return for the consumer's agreement to cut electric loads upon request from the utility (usually during critical periods, such as summer afternoons when the system demand approaches the utility's generating capability).

alternator: A machine (generator) for producing alternating currents or voltages.

Alternator: Alternator is the electromechanical devices which convert mechanical energy in to electrical energy. It is used in automobile to charge the battery.

Alternator : A device that supplies alternating current.

Alternator-rectifier exciter: Alternator-rectifier exciter a source of field current of a synchronous machine de-rived from the rectified output voltage of an alternator. The components of the exciter consist of the alternator and the power rec-tifier (including possible gate circuitry), ex-clusive of all input control elements. The rectifier circuits may be stationary, or rotate with the alternator, which may be driven by a motor, prime mover, or by the shaft of the synchronous machine.

ALU : [see arithmetic logic unit]

Alumina: Aluminum oxide produced from bauxite by a complicated chemical process. It is a material that looks like granulated sugar. Alumina is an intermediate step in the production of aluminum from bauxite, and is also a valuable chemical on its own.

Aluminizing: Forming an aluminum or aluminum alloy coating on a metal by hot dipping, hot spraying, or diffusion.

Aluminum Bus bars: An aluminum busbar is a component in electrical power distribution used to carry large currents and distribute power to multiple components. Busbars can be made from aluminum or copper and are typically rectangular plates.

Aluminum Oxide: A chemical compound of aluminum with oxygen, which forms immediately on an unprotected surface exposed to air. Unlike iron oxide (the rust that forms

on steel) aluminum oxide does not flake off, but forms a protective layer that blocks further oxidation and so protects the integrity of the metal. It is transparent and does not alter the appearance of the aluminum surface.

AM to PM conversion: AM to PM conversion phase variations of an output signal, due to passing through an active device, where the phase of the output signal varies in response with the amplitude of the input signal.

AM video : AM video the amplitude modulated video carrier wave is produced by an amplitude modulated video transmitter where the amplitude of the wave form varies in step with the video signal similar to that shown in the figure.

Am, amplitude modulation. : One of three basic ways (see also fm and phase modulation) to add information to a sine wave signal: the magnitude of the sine wave, or carrier, is modified in accordance with the information to be transmitted. See modulation.

Amateur radio : Amateur radio The practice and study of electronic communications as an avocation; most often referring to those persons possessing a license earned by examination (in the U.S., the Federal Communications Commission grants such licenses).

Ambient: The current condition of temperature, humidity and atmospheric pressure.

Ambient Air Temperature: Temperature of the surrounding air.

Ambient Compensation: The design of an instrument such that changes in ambient temperature do not effect the readings of the instruments.

Ambient field : Ambient field the background magnetic field level existing in the environment, without contribution from specific magnetic field sources.

Ambient Noise: The noise level in the area surrounding the machine or component to be tested with machine being tested not operating.

Ambient temperature: Ambient temperature the temperature of the air or liquid surrounding any electrical part or device. Usually refers to the effect of such temperature in aiding or retarding removal of heat by radiation and convection from the part or device in question.

Ambient Temperature: The temperature surrounding an object.

ambient temperature: The temperature of the surroundings in which the equipment is used or operated.

Ambient Temperature: The temperature of the air, water, or surrounding earth. Conductor ampacity is corrected for changes in ambient temperature including temperatures below 86°F. The cooling effect can increase the current carrying capacity of the conductor. (Review Section 310-10 of the Electrical Code for more understanding)

Ambient Temperature: The temperature of the surrounding environment generally between 68 to 77 degree Fahrenheit is considered as the ambient temperature

Ambient Temperature Sensor: The temperature sensor used to measure the ambient temperature range

Ambiguity : Ambiguity in artificial intelligence, the presence of more than one meaning or possibility.

American National Standards Institute (ANSI) : American National Standards Institute (ANSI) The U.S. organization that recommends standards for metrology, drawing symbology and numerous other facets for products and industries.

American Indian Coal Lease: A lease granted to a mining company to produce coal from land held in trust by the United States for Native Americans, Native American tribes, and

Alaska Natives in exchange for royalties and other revenues.

American National Standards Institute (ANSI): A national standards organization that defines standard in the United States.

American Standard Code for Information Interchange (ASCII): A character code developed by ANSI and used extensively for data communication.

American Wire Gage (AWG): A standard system used in the United States for designating the size of an electrical conductor based on a geometric progression between two conductor sizes.

American Wire Gage (AWG): American Wire Gauge (AWG) is a U.S. standard set of non-ferrous wire conductor sizes. The AWG of a stranded wire is determined by the cross-sectional area of the equivalent solid conductor, American wire gauge (AWG), also known as the Brown & Sharpe wire gauge

American wire gauge (AWG): A standard for wire sizes, with the smallest being designated as forty (40) and the largest as four aught (4/0).

American-british-canadian-australian armies standardisation program (abca). : An organization begun in 1947 that produces standardization agreements and advisory publications to help the member armies operate together during coalition operations.

AMF (Lighting): Average Maintained Footcandles

AMI: Advanced Metering Infrastructure is a term denoting electricity meters that measure and record usage data at a minimum, in hourly intervals, and provide usage data to both consumers and energy companies at least once daily.

Ammeter: An instrument used for measuring current.

ammeter: An instrument for measuring electric current.

Ammeter: An electric meter used to measure current, calibrated in amperes.

Ammeter : Ammeter an instrument for measuring electric current in amperes.

Ammonia maser : Ammonia maser first maser, invented by Charles H. Townes. Such a maser operates at microwave frequencies.

Amorphous: Non crystalline.

Amorphous alloy : Amorphous alloy a ferromagnetic material with very low coercive force (i.e., a narrow hysteresis loop). The material is formed as a very thin ribbon, by freezing the molting alloy before it can crystallize, thus providing a random molecular orientation.

Amorphous Semiconductor: A noncrystalline semiconductor material used in photovoltaic panel construction. It is easier and less costly to manufacture than crystalline, but is less efficient and degrades over time. It is also known as thin film.

Amorphous semiconductor: A non-crystalline semiconductor material that has no long-range order.

Amorphous Semiconductor: A solid state material that can be switched from one state to another. a substance in the amorphous solid state that has the properties of a semiconductor.

Amorphous silicon: An alloy of silica and hydrogen, with a disordered, noncrystalline internal atomic arrangement, that can be deposited in thin-film layers (a few micrometers in thickness) by a number of deposition methods to produce thin-film photovoltaic cells on glass, metal, or plastic substrates.

Amortization: The depreciation, depletion, or charge-off to expense of intangible and tangible assets over a period of time. In the extractive industries, the term is most frequently

applied to mean either (1) the periodic charge-off to expense of the costs associated with non-producing mineral properties incurred prior to the time when they are developed and entered into production or (2) the systematic charge-off to expense of those costs of productive mineral properties (including tangible and intangible costs of prospecting, acquisition, exploration, and development) that had been initially capitalized (or deferred) prior to the time the properties entered into production, and thereafter are charged off as minerals are produced.

Amp: Ampere SI unit of current also denoted as A

Ampacity: The current-carrying capacity of conductors in amperes.

Ampacity: The current in amperes that a conductor can carry continuously under given conditions of use without exceeding its temperature rating.

ampacity: The current-carrying capacity of conductors or equipment, expressed in ampere.

Ampacity: The current-carrying capacity of conductors or equipment, expressed in amperes.

Ampacity: Ampacity is defined as the maximum amount of electric current a conductor or device can carry before sustaining immediate or progressive deterioration.

Ampacity : Ampacity the maximum current which can be safely carried by a conductor under specified conditions.

Amperage (A): The amount of electric current in amperes.

Ampere: The unit of measurement of electrical current produced in a circuit by 1 volt acting through a resistance of 1 Ohm.

Ampere: The unit expressing the rate of flow of an electric current. One ampere is the current produced by a difference in potential of one volt across a resistance of one ohm; An electric current flowing at the rate of one coulomb per second.

Ampere: An ampere is SI unit of the rate of electron flow in an conductor. Unit of electric current. Dimension symbol of Ampere is I.

Ampere (A): The unit of measurement for current. One ampere is that current whereby one coulomb of charge passes through a point in one second. Named for André Ampere.

ampere (A): The ampere is the SI unit of current. It is a fundamental unit. It is defined as that constant current which, if maintained in two straight parallel conductors of infinite length, of negligible circular cross-section, and placed 1 meter apart in vacuum, would produce between these conductors a force equal to 2×10^{-7} newton per meter of length [1948].

Ampere (A) or amp: The basic SI unit measuring the quantity of electricity. The unit for the electric current; the flow of electrons. One amp is 1 coulomb passing in one second. One amp is produced by an electric force of 1 volt acting across a resistance of 1 ohm.

ampere hour capacity: The quantity of electricity measured in ampere-hour which may be delivered by a cell or battery under specified conditions.

Ampere interrupting rating: Ampere interrupting rating the interrupting rating of a device expressed in amps (often rms symmetrical amps). See also MVA interrupting rating.

Ampere-Hour: The number of amperehours that can be delivered under specified conditions of temperature, rate of discharge, and final voltage.

Ampere-hour: The amount of energy that allow one ampere of current to flow for one hour is called ampere hour. It is denoted by A-h.

Ampere-hour (Ah): Unit of measurement for cell or battery capacity. One Ah

generally means that a current of one amp has been flowing for one hour.

Ampere-hour capacity : This is a unit of measurement of current storage capacity of any battery.

Ampere-hour capacity (storage battery): An electric meter that measures and registers the integral, with respect to time, of the current of a circuit in which it is connected.

Ampere-hour meter: The use of one Ampere for one hour.

Ampere-hour meter: The meter used to measure the battery capacity is known as ampere-hour meter.

Ampere's Law : Ampere's Law a fundamental relationship in electromagnetic theory. In a fairly general form it is expressed by one of Maxwell's

ampere-turn (AT): Formerly used as the unit of magnetomotive force (mmf). It is the product of the number of turns in a coil and the current in amperes which flows through it. [Note Since turns is not a unit, the SI Unit of mmf is the ampere]

Amperometric sensor: Amperometric sensor an electrochemical sensor that determines the amount of a substance by means of an oxidation– reduction reaction involving that substance. Electrons are transferred as a part of the re-action, so that the electrical current through the sensor is related to the amount of the substance seen by the sensor.

Amplidyne : Amplidyne a special generator that acts like a DC power amplifier by using compensation coils and a short circuit across its brushes to precisely and fastly control high powers with low level control signals.

amplification: Procedure of expanding the strength of a signal.

amplifier: A device or circuit used to increase the power current, and voltage level of a signal.

Amplifier: A electronic device that increase the power of signals. Amplifier can be a voltage or current amplifier.

Amplifier : Amplifier a circuit element that has a linear input-output signal relationship, with gain in voltage, current, and/or power. See also balanced amplifier , feedback amplifier , feedforward amplifier , laser amplifier , maser amplifier , optical amplifier , single-ended amplifier .

Amplifier Class: Amplifier are classified as A, B, AB and C for analog designs and class D and E for switching designs based on the proportion of each input cycle. There are several other amplifier classes, class-G and class-H amplifiers

Amplifier : An electronic circuit that boost the voltage and/or the current level of a signal.

Amplifier.: Electronic component used to boost (amplify) signals. Performance (called gain) measured in decibels.

Amplitron : Amplitron a classic crossed-field amplifier in which output current is obtained primarily by secondary emission from the negative electrode that serves as a cathode throughout all or most of the interaction space.

Amplitude: A measurement of the distance from highest to lowest excursion of a variable or physical motion. Often used with reference to waveforms.

Amplitude: The strength of a signal, usually measured in volts, amperes, or watts.

Amplitude: Amplitude descriptor of the strength of a wave disturbance such as an electromagnetic or acoustic wave.

amplitude: Maximum or peak value of a quantity or wave varying in an oscillatory manner,

measured with respect to the reference. An assembly of switchgear with or without instruments, but the term does not apply to groups of local switches in final circuits.

Amplitude equations: Amplitude equations a form of the Schrodinger" equation that describes the evolution of a quantum mechanical system in terms of only the coefficients of the preferred basis states. These coefficients are known as quantum mechanical amplitudes and contain both magnitude and phase information. Amplitude equations are often used to gain physical insight into interactions of quantum systems with electromagnetic fields. See also Schrodinger" wave equation (SWE).

Amplitude distortion. : An unwanted change in signal amplitude, usually caused by non-linear elements in the communications path.

Amplitude modulation: An analog-to-analog conversion method in which the carrier signal amplitude varies with the amplitude of the modulating signal.

amplitude modulation, AM: A process whereby the amplitude of the carrier is controlled by the modulating signal.

Amplitude shift keying (ASK): A modulation method in which the amplitude of the carrier signal is varied to represent binary 0 or 1.

Amplitude shift keying. : Modulation in which each significant condition in a modulating discrete signal is represented by a specified value of the amplitude of a carrier oscillation.

Amplitude-modulated link: Amplitude-modulated link a transmitter receiver system that utilizes amplitude-modulation for the transmission of signal frequencies.

Amps - access monitoring and policing system: A processor based system which provides a range of facilities. Carries out system supervisory function in monitoring system parameters, eg traffic quality, access power balancing and checking for illegal access on skynet.

AMR: Automated Meter Reading is a term denoting electricity meters that collect data for billing purposes only and transmit this data one way, usually from the customer to the distribution utility.

Anaerobic decomposition: Decomposition in the absence of oxygen, as in an anaerobic lagoon or digester, which produces CO₂ and CH₄.

Anaerobic lagoon: A liquid-based organic waste management installation characterized by waste residing in water at a depth of at least 6 feet for periods of 30 to 200 days.

Analog: A continuously varying entity.

analog: The branch of electronics dealing with continuously varying quantities.

Analog: Analog is log analysis computer program that runs under operating systems like Windows, Mac OS, Linux, and most Unix systems. Analog has support for 35 languages.

Analog data: Data that is continuous and smooth and not limited to a specific number of values.

Analog data : Analog data data represented in a continuous form with respect to continuous time, as contrasted with digital data represented in a discrete (discontinuous) form in a sequence of time instant.

Analog Device: An electronic device that requires or produces an infinitely variable signal, usually voltage or current, in response to a state change within the device.

Analog hierarchy: A telephone company system in which multiplexed signals are combined into successively larger groups for more efficient transmission.

Analog Hygrometers: An analog hygrometer measures relative humidity - the amount of

moisture in the air relative to the amount of moisture the air can hold. The analog feature means that the hygrometer measures the relative humidity using mechanical components and reports the relative humidity on a calibrated dial gauge.

Analog leased service: A service featuring a dedicated line between two users.

Analog Multimeters: A multimeter is an electrical measurement device used to measure voltage, current, and resistance in an electrical circuit. In an analog multimeter, motion of the needle is directly proportional to the physical quantity being measured over within a preselected range. The output value is reported using a needle that moves over a calibrated scale with units for each measurement type. Multimeters are usually handheld devices though bench-top units with very high accuracy also exist.

Analog multiplier : Analog multiplier a device or a circuit that generates an analog output signal that is proportional to the product or multiplication of two analog input signals.

Analog network: A network that uses analog signals.

Analog optical computing: Analog optical computing optical computing that involves two-dimensional analog operations such as correlation and complex spatial frequency filtering primarily based on the property of lens to perform two-dimensional Fourier transform. In analog optical computing, operations to be performed are matched with and based on already known optical phenomena.

Analog Output Plc: A PLC is a programmable-logic controller - a computer-based electronic system often used to control other devices including machines, hardware components, or other control modules. The PLC system receives input in digital or analog form, processes the input signal based on needs of the device, then transmits the signal to control the output device. In an analog output PLC, the controller outputs voltage or current in order to control equipment. This type of controller is frequently used in industrial environments to control motors, actuators, valves, and pumps.

Analog services: A telephone service using analog transmission.

Analog signal: A continuous waveform that changes smoothly over the time.

Analog signal : Analog signal a signal represented in a continuous form with respect to continuous time, as contrasted with digital signal represented in a discrete (discontinuous) form in a sequence of time instant. See also analog data.

Analog signal conditioning: Analog signal conditioning an interface between the sensor or transducer output, which represents an analog or physical world, and the analog-to-digital converter.

Analog Switch: The Electronic components having no moveable parts that works like relays to switch the system.

Analog switched service: A temporary analog connection between two users.

Analog Temperature Sensor: Temperature sensor with a continuous analog voltage or current output.

analog to digital converter, A/D converter, A to D converter: A device or circuit used to convert an analog signal to a digital signal across a pair of terminals.

Analog Trigger: A trigger that occurs at a user-selected point on an incoming analog signal. Can be set to occur at a specific level on either an increasing or a decreasing signal (positive or negative slope).

Analog : Generally refers to signals that have many discrete values versus digital binary

signal that have only two states. Also, refers to the branch of electronics dealing with such signals and their circuits. The term linear is another term often used for such circuits and signals.

Analog-to-analog modulation: The representation of analog information by an analog signal.

Analog-to-Digital: Generic term referring to the conversion of analog information to the digital language of computers.

Analog-to-digital conversion: The representation of analog information by a digital signal.

Analog-to-digital converter (A/D): A circuit or device used to convert an analog signal to a digital form.

Analog-to-Digital Converter (ADC): An electric device that converts analog signals to an equivalent digital form.

Analogue loopback. : A diagnostic test that forms the loop at the modem's telephone line interface; (refer to loopback).

analogue meter: Show a particular (continuous variable) deflection for a given input quantity.

Analogue signal. : A signal that represents information by varying a quantity, such as amplitude or frequency, continuously between upper and lower limits.

Analogue. : Continuously variable as opposed to discretely variable. Physical quantities such as temperatures are continuously variable and so are described as analogue; analogue signals vary in accordance with the physical quantities they represent. The public telephone network was designed to transmit voice in analogue form. Contrast with digital.

analogy: A likeness in some ways between dissimilar things that are otherwise unlike. Because of the similarity, many of the equations are identical except for a change of variables or subscripts.

Analysis filter : Analysis filter a filter in the analysis section of a sub-band analysis and synthesis system.

Analysis.: In electronic warfare, a step in the intelligence cycle in which information is subjected to review in order to identify significant facts. The examination of the product of intercept and df to obtain elint and sigint and target intelligence. See signal analysis.

Analyte : Analyte the substance being measured by a chemical or bioanalytical sensor and instrumentation system.

Analytic signal : Analytic signal refers to a signal that has a Fourier transform that is zero valued for negative frequencies; i.e., the signal has a one-sided spectrum.

Anamorphic lenses : Anamorphic lenses a lens system having a difference in optical magnification along the two mutually perpendicular axes (vertical plane or tilt vs. Horizontal plane or panorama).

Anchor: A device that supports and holds in place conductors when they are terminated at a pole or structure. The anchor is buried and attached to the pole by way of guy wire to counteract the mechanical forces of these conductors.

Anchor: A metallic device used to connect a vessel to the bed of a body of water to prevent the craft from wind and current

Anchor Bolt: An anchor bolt is a specialized bolt used to attach items to hard surfaces such as concrete, asphalt, brick or stone. Anchor bolts are made up of a threaded end that is turned

into the surface of interest and a washer and nut used to carry the load on the bolt. Anchor bolts come in many shapes, sizes, and materials depending on the application and the load requirements.

Ancillary services: Services that ensure reliability and support the transmission of electricity from generation sites to customer loads. Such services may include load regulation, spinning reserve, non-spinning reserve, replacement reserve, and voltage support.

AND : AND gate a device that implements the Boolean AND operation. See AND.

AND gate: A digital logic circuit used to implement the AND operation. The output of this circuit is 1 only when each one of its inputs is a 1.

AND gate : AND the Boolean operator that implements the conjunction of two predicates. The truth table for $X \wedge Y$ is n-ary ands can be obtained as conjunction of binary ands.

AND gate or logic: Generates a logic 1 only if all of its two or more inputs are 1.

Anemometer: An Anemometer is used to measure wind speed and wind pressure. There are several different types of anemometers. These include cup, windmill, hot wire, laser doppler, and ultrasonic anemometers.

Angle diversity : Angle diversity a diversity technique used in radio communications based on receiving a signal over multiple arrival angles. The signal components are typically affected by uncorrelated fading processes and are combined in the receiver to improve performance. The main combining methods are selection diversity, equal gain combining, and maximal ratio combining.

Angle Iron: An iron or steel structural member that has been cast, rolled or bent (folded) so that its cross section is l shaped.

Angle modulation : Angle modulation a type of modulation where either the frequency (FM) or the phase (PM) of a carrier are varied.

Angle of incidence: In optics, the angle formed by a light ray approaching the interface between the two media and the line perpendicular to the interface.

Angle of reflection: In optics, the angle formed by a reflected light ray at the interface between the two media and the line perpendicular to the interface.

Angle of refraction: In optics, the angle formed by a refracted light ray at the interface between the two media and the line perpendicular to the interface.

Angle Plate: A precision holding fixture made of cast iron, steel or granite. The two principal faces are at right angles and may be slotted for holding the work or clamping to a table.

Angstrom : Angstrom popular unit not officially recognized as part of the SI unit system. Equal to 10^{-10}

Angstrom Units: (A) A unit of linear measure equal to 10^{-10} m, or 0.1 nm; not an accepted SI unit, but still sometimes used for small distances such as interatomic distances and some wavelengths.

angstrom : A unit used to measure very small lengths, such as wave length. Equal to 10^{-10} m

angular velocity w: Rate of rotation about an axis. It is the rate of change of angle with time. It is measured either in revolutions per second, revolutions per minute (r.p.m.) or radians per second (rad/s).

Anisochronous data channel. : A communications channel capable of transmitting data but not timing information. Sometimes called an asynchronous data channel.

Anisotropic diffusion: Anisotropic diffusion a process of progressive image smoothing as a

function of a time variable t , such that the degree and orientation of smoothing at a point varies according to certain parameters measured at

Anisotropic etch : Anisotropic etch an etch with an etch rate that is direction-dependent. In wet etching, the direction dependence has to do with crystallographic axis – some planes etch at different rates than others.

Anisotropy: The characteristics of exhibiting different values of a property in different directions with respect to a fixed reference system in the material.

Anisotropy : Anisotropy (1) the degree of variation in a property such as index of refraction with light propagation direction.

Anneal: To heat a metal to a temperature slightly below its melting point, then cool it gradually so as to soften it thoroughly. Fully annealed aluminum is said to be in the O temper.

Anneal: The process of controlled heating and cooling of a metal. In wire and cable products, copper and aluminum are annealed to increase flexibility while maintaining adequate strength.

Anneal: Anneal is to treat a metal by heating and slow cooling to change the microstructure to improve mechanical properties.

Anneal Cycle Code: Steel heat specification unique to the annealing base being charged.

annealing: Very slow regulated cooling, especially of metals, to relieve strains set up during heating or other treatment.

Annealing : Annealing a process often used in semi-conductor processing to cause a change in materials or device properties to improve the circuit performance and/or reliability. See also simulated annealing.

Annealing Twin: A twin formed in a metal during an annealing heat treatment.

Annihilation : Annihilation a process in which a particle and its anti-particle meet and convert spontaneously into photons.

Annual operating factor: The annual fuel consumption divided by the product of design firing rate and hours of operation per year.

Annual requirement: The reporting company's best estimate of the annual requirement for natural gas to make direct sales or sales for resale under certificate authorizations and for company use and unaccounted-for gas during the year next following the current report year.

Annual solar savings: The annual solar savings of a solar building is the energy savings attributable to a solar feature relative to the energy requirements of a non-solar building.

Annul bit : Annul bit a bit that is used to reduce the effect of pipeline breaks by executing the instruction after a branch instruction. The annul bit in a branch allows one to ignore the delay-slot instruction if the branch goes the wrong way. With the annul bit not set, the delayed instruction is executed. If it is set, the delayed instruction is annulled.

Annular Area: A ring shaped area often refers to the net effective area of the rod side of a cylinder piston, i.e., the piston area of the rod.

Annular cathode : Annular cathode a cathode of a vacuum tube with the shape of the emitting surface of the cathode is annular. The annular cathode can produce a hollow electron beam.

Annulus: A ring like part or, the orifice of a hollow die, through which extruded metal flows from the press.

Annunciators: An annunciator is an electronically-controlled board, typically using light emitting diodes (LED) to indicate the state of an electronic component. Annunciators come in

many design styles and are often customized to a specific application. An alarm annunciator is typically designed to specifically monitor sensors for fault conditions and safety concerns.

Anode: Anode the positive electrode of a device. Contrast with cathode.

Anode: 1) The positive electrode that emits positive ions and attracts negative ions, within a voltaic cell or other such device. 2) The positive pole of a battery.

anode: positive electrode. The element of an electronic device that receives the flow of electrons.

Anode: Negative terminal of cell is called during discharging.

Anode Furnaces: An anode furnace is a specialized fire-furnace used to refine blister copper into anode copper. Blister copper is 98% pure copper created during the smelting process when sulfur is removed. The anode furnace is used to further refine the blister copper by removing any remaining oxygen in the copper. The result is copper that is about 99% pure.

anomalous propagation (ap). : The transmission of electromagnetic radiation along other than the normal expected path, usually tending to follow the earth's curvatures, because of refractive effects such as ducting, unusual reflections or unusual scattering of energy from discontinuities in the path.

ANSI: American National Standards Institute

ANSI: American National Standards Institute. ANSI is located at 1430 Broadway, New York, NY 10018.

ANSI : ANSI American National Standards Institute, a body which administers numerous industrial standards in the USA including several which pertain to electric utility construction practices. See American National Standards Institute.

ANSI assembly identifier: The serial numbering scheme adopted by the American National Standards Institute (ANSI) to ensure uniqueness of an assembly serial number.

ANSI Flange: A mechanical device that is used to connect two pieces of pipe together to form a pressure tight joint. ANSI flanges are round, use through bolts and/or nuts to attach two matched flanges together or to a valve or other mechanical device. See ANSI standards for pressure and temperature ratings.

Ansi. : (american national standards institute) the national clearing house and coordinating organisation for voluntary standards in the usa and represents the usa in the iso; defined usascii (now ascii). Ansi does not directly develop standards but accredits other groups to do so. Membership includes manufacturers, common carriers, and other standards organisations such as the ieee. Ansi also produces federal information processing standards (fips) for the dod.

Answer. : The transmission made by the station called in response to the call received.

Answerback. : The method used in telex to ensure that the calling telex is connected to the correct destination telex. All telex terminals are equipped with an answerback code. When a connection is made, the calling terminal sends a "who are you" code and the destination replies with its answerback. The answerback is usually requested at the beginning and end of the message and printed on the hardcopy.

Answering tone. : A signal sent by the called modem (the "answer" modem) to the calling modem (the "originate" modem) on public telephone networks, that indicate the called modem's readiness to accept data.

Answering. : The process of responding to a calling station to complete the establishment of

a connection between stations.

antenna: A device consisting of spaced elements that are used to receive broadcast signals.

antenna: A system of conductors that radiates and or receives electromagnetic waves (radio waves).

Antenna : Antenna a device used to couple energy from a guiding structure (transmission line, waveguide, etc.) into a propagation medium, such as free space, and vice versa. It provides directivity and gain for the transmission and reception of electromagnetic waves.

Antenna array. : Antenna elements assembled in such a manner that the resulting radiation is concentrated in one or more directions.

Antenna diversity : Antenna diversity a diversity technique based on the use of multiple antennas either at the receiver (receiver antenna diversity) or at the transmitter (transmitter antenna diversity) in a radio communication link. If the separation of antennas is sufficient, the signal components are affected by different fading processes and are combined in the receiver to improve performance. See also RAKE receiver. Contrast with angle diversity.

Antenna figure of merit (g/t). : An antenna performance parameter equalling the antenna gain g , divided by the antenna noise temperature t , measured at the antenna's terminals

Antenna Gain: An antenna's transmission power, provided as a ratio of its output (send) signal strength to its input (receive) signal strength, normally expressed in dBi. The higher the dBi, the stronger the antenna.

Antenna Gain: Antenna gain is usually defined as the ratio of the power produced by the antenna from a far-field source on the antenna's beam axis to the power produced by a hypothetical lossless.

Antenna gain : Antenna gain the maximum ratio of an antenna's ability to focus or receive power in a given direction relative to a standard; the standard is usually an isotropic radiator or a dipole. The gain includes the efficiency of the antenna.

Antenna gain (directive gain). : The ratio of the radiation intensity, in a given direction, to the radiation intensity that would be obtained if the power accepted by the antenna were radiated isotropically

Antenna multicoupler.: Permits the use of several equipments (receivers) simultaneously on one antenna.

Antenna pattern : Antenna pattern graph or chart representing the absolute or normalized antenna gain as a function of angle (typically azimuth or elevation) and used to describe the directional properties of an antenna. In the near field, the antenna pattern is a function of the distance from the antenna whereas in the far field, the pattern is independent of distance from the antenna.

Antenna Q : Antenna Q ratio of the energy stored to the energy dissipated (ohmically or via radiation) per cycle.

Antenna, active. : Receive aerial with an integrated wideband amplifier. Thus a very weak signal is amplified immediately as it is received at the antenna before it ever reaches the receiver.

Antenna, dipole array. : A number of parallel dipoles producing a pattern with a main beam and many sidelobes and nulls.

antenna, gain. : The ratio, usually expressed in decibels, of the power required at the input of a loss-free reference antenna to the power supplied to the input of the given antenna to

produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum radiation. The gain may be considered for a specified polarization. Depending on the choice of the reference antenna a distinction is made between: a.) Absolute or isotropic gain (g_i), when the reference antenna is an isotropic antenna isolated in space. b.) Gain relative to a half-wave dipole (g_d), when the reference antenna is a half-wave dipole isolated in space whose equatorial plane contains the given direction. c.) Gain relative to a short vertical antenna (g_v), when the reference antenna is a linear conductor, much shorter than one quarter of the wavelength, normal to the surface of a perfectly conducting plane which contains the given direction.

Antenna, log periodic array. : An array of driven dipoles parallel to each other and is directional like a yagi array (but these dipoles are of different lengths and so this array is broadband).

Antenna, rhombic. : A non-resonant broadband antenna with a rhombic shape which produces an interface pattern with a main beam axis in line with the diagonal joining the feed point to the terminal point.

Antenna, yagi array. : A dipole and a number of parasites in one place; used as a directional antenna with considerable gain.

Antenna/aerial. : A device used to radiate or collect radio waves.

Anthracite: The highest rank of coal; used primarily for residential and commercial space heating. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite generally is less than 15 percent. The heat content of anthracite ranges from 22 to 28 million Btu per ton on a moist, mineral-matter-free basis. The heat content of anthracite coal consumed in the United States averages 25 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). Note Since the 1980's, anthracite refuse or mine waste has been used for steam electric power generation. This fuel typically has a heat content of 15 million Btu per ton or less.

Anthropogenic: Made or generated by a human or caused by human activity. The term is used in the context of global climate change to refer to gaseous emissions that are the result of human activities, as well as other potentially climate-altering activities, such as deforestation.

Anthropogenic: Referring to alterations in the environment due to the presence or activities of humans.

Anti Condensation Heaters: Anti condensation heaters are a type of space heater used to maintain temperature in a small enclosure in order to eliminate moisture and prevent condensation. These heaters are typically used in electrical components where condensation would be damaging to the system.

Anti Skid Flooring Systems: Anti-skid flooring systems provide a means to applying a non-slip surface to flooring surfaces, typically in industrial environments. Anti-skid systems can be epoxy-based coatings applied directly to the surface with a non-skid additive or the system can be a installed and removable non-skid matting such as a textured rubber flooring.

Anti Vibration Mountings: Anti-vibration mountings are typically used to reduce the transfer of machine vibration into adjacent surfaces or the air. Reduction of machine vibration

is an important process because excessive vibration can lead to component failure due to stress and fatigue and high levels of radiated noise from the vibrating surface. Anti-vibration mountings are typically made of a resilient compound such as rubber.

Anti-Aliasing: Anti-aliasing is the technique of minimizing the distortion when representing a high-resolution image at a lower resolution.

Antialiasing filter : Antialiasing filter typically, a filter that provides a prefiltering operation to ensure that the frequency components of a signal above the Nyquist frequency are sufficiently attenuated so that, when aliased, they will cause a negligible distortion to the sampled signal. See also aliasing, Nyquist frequency.

Antidependency : Antidependency a potential conflict between two instructions when the second instruction alters an operand which is read by the first instruction. For correct results, the first instruction must read the operand before the second alters it. Also called a write-after-read hazard.

Antidots : Antidots regions of repulsive potential, but which are configured so that particles (usually electrons) can pass around the potential and proceed past it. In the limiting case, a repulsive Coulomb potential is the simplest antidot structure.

Antiferromagnetic : Antiferromagnetic materials in which the internal magnetic moments line up antiparallel, resulting in permeabilities slightly greater than unity; unlike paramagnetic substances, these materials exhibit hysteresis and have a Curie temperature. Examples include manganese oxide, nickel oxide, and ferrous sulfide.

Antifuse : Antifuse a fuse-like device that when activated becomes low-impedance.

Anti-jamming (aj) . : Measures to minimize the effects of jamming.

Antiparticle : Antiparticle a particle having the same mass as a given fundamental particle, but whose other properties, while having the same magnitude, may be of opposite sign. Each particle has a partner called an antiparticle. For example, electrical charge in the case of the electron and positron, magnetic moment in the case of the neutron and antineutron. On collision a particle and its antiparticle may mutually annihilate with the emission of radiation. Some properties of the antiparticle will be identical in magnitude but opposite in sign to the particle it is paired with.

Anti-plugging : Anti-plugging a feature to prevent a motor from reversing direction directly across the line. The purpose of the anti-plugging coil and contact is to prevent the motor from starting in the opposite direction until the speed has slowed enough where the current and torque surges are within acceptable levels when changing direction.

Antipodal : Antipodal symmetry created by simultaneously mirroring an object in both the X and Y axes.

Antiproton : Antiproton antiparticle to the proton. It is a strongly interacting baryon carrying unit negative charge. It has mass of 938 mev and carries spin 1/2. Placed on top or below the layer of photoresist to reduce the reflection of light, and hence reduce the detrimental effects of standing waves or thin film interference.

Anti-Pumping Device: A feature incorporated in a Circuit Breaker or reclosing scheme to prevent repeated operation where the closing impulse lasts longer than the sum of the relay and CB operating times.

Anti-Pumping Device: The anti-pumping devices or relay is a device in circuit-breaker whose function is to prevent multiple breaker closures.

Antireflection coating: A thin coating of a material, which reduces the light reflection and increases light transmission, applied to a photovoltaic cell surface.

Anti-Skid Flooring Systems: Anti skid flooring systems provide a means to applying a non slip surface to flooring surfaces, typically in industrial environments. Anti skid systems can be epoxy based coatings applied directly to the surface with a non skid additive or the system can be a installed and removable non skid matting such as a textured rubber flooring.

AOD: Argon Oxygen Decarburization

APART/PADE : APART/PADE a computer code for anal-ysis of stray light in optical systems developed by the University of Arizona and BRO, Inc.

APC-7 connector : APC-7 connector common term for am-phenol precision connector - 7mm. A “sex-less” coaxial connector with butt contact be-tween both the inner and outer conductors capable of low standing wave ratios to fre-quencies up to 18 ghz. Two sequences. See convolution.

Aperiodic signal: A signal that does not exhibit a pattern or repeating cycle.

Aperiodic signal : Aperiodic signal a signal that is not pe-riodic, i.e., one for which $x(t) \neq x(t + T)$. This means that the signal $x(t)$ has a property that is changed by a time shift T . See also periodic signal.

Aperture: In an extrusion die, the shaped opening through which the heat softened metal is forced and which gives the extruded product its cross sectional shape. Also called the ? orifice?.

aperture: Opening. In optical instruments, it is the size of the opening admitting light.

Aperture : Aperture (1) an opening to a cavity, or wave-guide, from which radiation is either received or transmitted. Typically used as antenna or a coupling element.(2) a physical space available for beam to occupy in a device. Aperture limitations are the physical size of the vacuum chamber; a magnetic field anomaly may deflect the beam so that the full available aperture cannot be used.

Aperture coupling : Aperture coupling a method of coupling a transmission line to an antenna in which fields leak through an aperture in a metallic ground plane separating the line from the an-tenna.

Aperture problem : Aperture problem given a sequence of images over time we would like to infer the motion (optical flow) field. Based on local image information (i.e., based on the values of those pixels falling within some aperture) only the component of motion along the gray-level gradient can be inferred; that the com-ponent of motion perpendicular to the gray-level gradient can only be known by resorting to global methods is known as the aperture problem. See optical flow , optical flux .

API: The American Petroleum Institute, a trade association.

API gravity: American Petroleum Institute measure of specific gravity of crude oil or condensate in degrees. An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API; it is calculated as follows

API Standards: The American Petroleum Institue (API) has been developing standards for the industry since 1924. The API now maintains over 500 standards of practice covering the entire oil and gas industry. These standards include recommended practices and procedures, specifications, regulatory codes, and technical reports and documentation.

Apodization : Apodization (1) a deliberate variation in the transmission of an optical aperture as a function of distance from the center or edges, in order to control optical transfer functions.(2) a deliberate variation in the strength of a signal with time.

Apogee. : The most distant point from the centre of the earth to an orbit around it

Appalachian Region: Consists of Alabama, Eastern Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

Apparent consumption, (coal): Coal production plus imports of coal, coke, and briquets minus exports of coal, coke, and briquets plus or minus stock changes. Note The sum of "Production" and "Imports" less "Exports" may not equal "Consumption" due to changes in stocks, losses, unaccounted-for coal, and special arrangements such as the United States shipments of anthracite to United States Armed Forces in Europe.

Apparent consumption, natural gas (international): The total of an individual nation's dry natural gas production plus imports less exports.

Apparent consumption, petroleum (international): Consumption that includes internal consumption, refinery fuel and loss, and bunkering. For countries in the Organization for Economic Cooperation and Development (OECD), apparent consumption is derived from refined product output plus refined product imports minus refined product exports plus refined product stock changes plus other oil consumption (such as direct use of crude oil). For countries outside the OECD, apparent consumption is either a reported figure or is derived from refined product output plus refined product imports minus refined product exports, with stock levels assumed to remain the same. Apparent consumption also includes, where available, liquefied petroleum gases sold directly from natural gas processing plants for fuel or chemical uses.

Apparent Contraction: The net contraction of a casting dimension due to true metal contraction, mold wall movement and restraint during solidification and cooling.

Apparent power: The product of voltage times current in a circuit containing reactances and measured in volt-amperes.

Apparent power: The product of the voltage (in volts) and the current (in amperes). It comprises both active and reactive power. It is measured in "volt-amperes" and often expressed in "kilovolt-amperes" (kVA) or "megavolt-amperes" (MVA). See Power, Reactive Power, Real Power.

apparent power: The apparent power of an alternating current circuit is the product of the rms values of the voltage and the current. [Unit volt-ampere or VA]

Apparent power : Apparent power (1) in an AC system, the product of voltage, E and current, I . Apparent power (or total power) is composed of two mutually independent components an active component (real power), and a reactive component (imaginary power). Apparent power is denoted by S , and has the unit of voltamperes.(2) the scalar product of the voltage and current delivered to the load. It can also be expressed as the vector $S = P + jQ$, where P is real power and Q is reactive power.

Apparent Power (volt-amperes): The product of the applied voltage and current in an ac circuit. Apparent power, or voltamps, is not the true power of the circuit because the power factor is not considered in the calculation.

Apparent Power (volt-amperes): The combination of reactive power and true power or the product of a circuit's voltage and current, without reference to phase angle is called apparent

power. Apparent power is measured in the unit of Volt-Amps (VA) and symbol of Apparent Power is S

Applet: A computer program for creating an active web document. It usually written in java.

Appliance: A piece of equipment, commonly powered by electricity, used to perform a particular energy-driven function. Examples of common appliances are refrigerators, clothes washers and dishwashers, conventional ranges/ovens and microwave ovens, humidifiers and dehumidifiers, toasters, radios, and televisions. Note Appliances are ordinarily self-contained with respect to their function. Thus, equipment such as central heating and air conditioning systems and water heaters, which are connected to distribution systems inherent to their purposes, are not considered appliances.

appliance: An Item of current using equipment other than a luminaire or an independent motor. These are generally not industrial and normally built in standardized sizes or types, which are installed or connected as a unit to perform one or more functions.

Appliance efficiency index: A relative comparison of trends in new-model efficiencies for major appliances and energy-using equipment. The base year for relative comparisons was 1972(1972=100). Efficiencies for each year were efficiencies of different model types that were weighted by their market shares.

Appliance efficiency standards: The National Appliance Energy Conservation Act of 1987 established minimum efficiency standards for major home appliances, including furnaces, central and room air conditioners, refrigerators, freezers, water heaters, dishwashers, and heat pumps. Most of the standards took effect in 1990. The standards for clothes washers, dishwashers, and ranges took effect in 1988, because they required only minor changes in product design, such as eliminating pilot lights and requiring cold water rinse options. The standards for central air conditioners and furnaces took effect in 1992, because it took longer to redesign these products. Appliance efficiency standards for refrigerators took effect in 1993.

Application adaption layer (AAL): A layer in ATM protocol that breaks user data into 48-bytes payloads.

Application layer: The seventh layer in the OSI model; provides access to network resources.

Application layer.: Highest (seventh) layer in osi model, containing all user or application programs.

Application program (1). : (in general) a program that is designed to perform a specific user function.

Application program (2). : (in data communications) a program (that frequently resides in data communications equipment) used to connect the communicate with terminals that performs a set of specified activities for terminal users.

Application-specific integrated circuit (ASIC) : Application-specific integrated circuit (ASIC) an integrated circuit designed for one particular application.

approval to operate. : A temporary approval, granted normally when the certification and accreditation process has been followed, but staffing, certification activities, documentation, or testing is incomplete or outstanding. There may or may not be a higher residual risk to be assumed by the departmental security official. Implicit in the approval to operate is an agreement by the operational authority to action the outstanding items prior to the expiry of the approval to operate (ca).

Approximately controllable system: Approximately controllable system an infinite-dimensional stationary linear dy-namical system where the attainable set K_1 is dense in the infinite-dimensional state space X . The set is said to be approximately controllable in T_0 ; $T \cup U$ if the attainable set K_0 ; $T /$ is dense in the infinite-dimensional state space X . Approximate controllability in T_0 ; $T \cup U$ always implies approximate controllability. The converse statement is not always true.

Apron Conveyors: An apron conveyor is a specialized conveyer system used to carry granular or lumpy material. The conveyer is made up of a series of individual apron plates that are overlapped and connected on their underside by hinges. The overlapping aprons provide strength for heavy duty loads and the lack of gaps helps to eliminate loss of material for granular loads. The apron construction also makes it easy to vary the length of the conveyor by adding or removing apron plates.

AR: Automatic Recloser.

ARA: Amsterdam-Rotterdam-Antwerp

Arbiter : Arbiter a unit that decides when multi-ple requestors may have access to a shared resource.

Arbitrage: The simultaneous purchase and sale of identical or similar assets across two or more markets in order to profit from a temporary price discrepancy.

Arbitrary: Arbitrary reference frame a two dimensional space that rotates at an unspecified angular velocity ω . In electric machines/power system analysis, an orthogonal coordinate axis is established in this space upon which fictitious windings are placed. A linear transformation is established in which the physical variables of the system (voltage, current, flux linkage) are referred to variables of the fictitious windings.

Arc: An arcing fault is the flow of current through the air between phase conductors or phase and neutral or ground. An arcing fault can release tremendous amounts of concentrated radiant energy at the point of the arcing in a small fraction of a second result

arc: Highly luminous discharge at a very high temperature (around 3000oC). An electric arc is produced when an electric current flows between two electrodes.

Arc detector : Arc detector a device placed within a microwave power tube or within one or more of the external cavities of a microwave power tube whose purpose is to sense the presence of an overvoltage arc.

Arc fault interrupter : Arc fault interrupter the mechanism that breaks the fault current arc in a power circuit breaker.

Arc Flash: Maximum capability for arc flash protection of a particular garment or fabric measured in calories per square centimeter. Though both garments and fabrics can be used for protection a garment made from more than one layer of arc flash rated fabric will ha

Arc Flash: arc flash or flashover is electrical explosion which occurs due to a low-impedance connection to ground or another voltage phase in an electrical system.

Arc Furnace: A steel melting furnace in which heat is generated by an arc between graphite electrodes and the metal. Both carbon and alloy steels are produced in electric arc furnaces and scrap, rather than molten metal, is used as the base material. Furnaces with capacities up to 200 tonnes are now in use.

Arc lamp : Arc lamp lamp made by driving a high current across a gap between two electrodes. Some types operate in air consuming the electrode, for example, a carbon arc in

which the electrode material is made as a rod and fed into the discharge to replace what is consumed. Others operate in a vacuum envelop that reduces the electrode consumption.

ARC net: Token-passing network technology in which nodes Otake turnsO talking according to which node has the token.

Arc Plasma Cutters: An arc plasma cutter is a specialized tool used to cut steel and other metals by creating a plasma torch. In an arc plasma cutter, an inert gas such as ejected from a high-speed nozzle and an electrical arc is created from the nozzle to the surface. The arc causes some of the gas to ignite, allowing for the removal of the material as a result of melting from the plasma.

Arc resistance : Arc resistance period of time that the sur-face of an insulating material can be submit-ted to the action of an electrical arc without becoming conductive.

Arc Thermal Performance Value: A discharge of electricity through air or a gas.

Arc Welding Machines: Arc welding machines are comprised of a power supply and a welding torch for the purpose of arc welding metal components. These machines can come in 1-phase or 3-phase units for use in either residential or industrial settings.

Arcair Torch: An electric arc torch with air ducts running parallel to the electrode, used to remove metal and surface defects from ferrous castings.

Archimedes Screw Pumps: This pump is at least 2,000 years old. The Archimedes Screw (also called an Archimedes Snail) was used for irrigation and powered by horses, people, mules, etc. This pump is even used today, although rarely! The helix revolves inside a tube (only the bottom of the tube is shown) and the water rises accordingly. Whether or not it was actually invented by Archimedes is certainly debatable, though his overall brilliance is not.

Architectural Finish: An architectural finish is a standard finish characterized by a uniformly good appearance. This finish is most often specified for ?exposed? surfaces.

Architecture. : The manner in which as system (such as a network or a computer) or program is structured. See also closed architecture, distributed architecture, and open architecture.

Arcing ground : Arcing ground a ground fault on a power line which alternately clears and restrikes, causing high, repetitive voltage surges.

Arcing Time: The time between instant of separation of the CB contacts and the instant of arc excitation.

Arcing Time: The time interval between the instant of the initiation of the arc in a pole or a fuse and the instant of final arc extinction in that pole or that fuse.

Arc-over Voltage: The minimum voltage required to cause an arc between electrodes separated by a gas or liquid insulation.

are: A metric unit of area, especially with land. Equal to 100 square meter.

Area radar prediction analysis. : Radar target intelligence study designed to provide radar significant data for use in the preparation of radar target predictions.

Areal density : Areal density a measure for the improve-ment in the capacity of a disk. It is the prod-uct of the number of tracks per inch and the number of bits per inch, i.e., it is the number of bits per square inch.

argand diagram: A plot of the cartesian co-ordinates (real and imaginary components) or the polar co-ordinates of a complex number on the x-y plane.

Argon Oxygen Decarburization (Aod): WHAT A process for further refinement of stainless

steel through reduction of carbon content. **WHY** The amount of carbon in stainless steel must be lower than that in carbon steel or lower alloy steel (i.e., steel with alloying element content below 5%). While electric arc furnaces (EAF) are the conventional means of melting and refining stainless steel, AOD is an economical supplement, as operating time is shorter and temperatures are lower than in EAF steelmaking. Additionally, using AOD for refining stainless steel increases the availability of the EAF for melting purposes. **HOW** Molten, unrefined steel is transferred from the EAF into a separate vessel. A mixture of argon and oxygen is blown from the bottom of the vessel through the melted steel. Cleaning agents are added to the vessel along with these gases to eliminate impurities, while the oxygen combines with carbon in the unrefined steel to reduce the carbon level. The presence of argon enhances the affinity of carbon for oxygen and thus facilitates the removal of carbon.

Argument : Argument (1) an address or value that is passed to a procedure or function call, as a way of communicating cleanly across procedure/function boundaries.(2) a piece of data given to a hardware operator block.

Arithmetic and logic unit (ALU): Arithmetic and logic unit (ALU) a combinational logic circuit that can perform basic arithmetic and logical operations on n-bit binary operands.

Arithmetic coding : Arithmetic coding a method (due to Elias, Pasco, Rissanen and others) for lossless data compression. This incremental coding algorithm works efficiently for long block lengths and achieves an average length within one bit of the entropy for the block. The name comes from the fact that the method utilizes the structures of binary expansions of the real numbers in the unit interval.

Arithmetic instruction: Arithmetic instruction a machine instruction that performs computation, such as addition or multiplication.

arithmetic logic unit ALU: A digital circuit used in computers to perform arithmetic and logic operations.

Arithmetic operation: Arithmetic operation any of the following operations and combination thereof: addition, subtraction, multiplication, division.

arithmetic progression: A series of quantities in which each term differs from the preceding term by a constant difference.

Arithmetic shift : Arithmetic shift a shift in which it is assumed that the data being shifted is integer arithmetic in nature; as a result, the sign bit is not shifted, thereby maintaining the arithmetic sign of the shifted result. See also logical shift.

Arm : Arm a part of a robot. A robot is composed of an arm (or mainframe) and a wrist plus a tool. For many industrial robots the arm subassembly can move with three degrees of freedom. Hence, the arm subassembly is the positioning mechanism. See also industrial robot.

ARMA : ARMA See auto-regressive moving-average model.

Armature: The moving part of a motor or generator.

Armature: Armature the magnetic circuit of a rotating electrical machine, including the main current carrying winding, in which an alternating voltage is induced by the magnetic field.

armature: The coil or coils of an electric motor or generator or of an electric apparatus in which a voltage is induced by a magnetic field.

Armature circuit : Armature circuit components of the machine that carry armature current. For example, in a DC machine the armature circuit could consist of the armature windings,

brushes, series field winding, compensating windings, interpoles, starting resistor(s), main-line contacts, and overload sensor.

Armature current limiting: Armature current limiting a condition wherein the stator currents are clamped at the maximum allowable limit due to excessive heating of the stator.

Armature reaction : Armature reaction (1) in DC machines, a distortion of the field flux caused by the flux created by the armature current. Armature reaction in a DC machine causes lower flux at one pole-tip and higher flux at the other, which may lead to magnetic saturation. It also shifts the neutral axis, causing sparking on the commutator. (2) in AC synchronous machines, a voltage “drop” caused by the armature current. In the steady state model of the synchronous machine, the armature reaction is accounted for by a component of the synchronous reactance.

Armor: An outer metal layer applied to a cable for mechanical protection. Armor Rods are comprised of factory formed wire, designed to be applied to a range of conductor sizes. Preformed Line Products manufacturers Armor Rods.

Armor: Armor are the protective coverings that is used to prevent any physical damage or harm or shock from being inflicted to an object or current.

Armor Rod: An outer metal layer applied to a cable for mechanical protection. Armor is comprised of factory formed wire, designed to be applied to a range of conductor sizes. Preformed Line Products manufacturers Armor.

Armor Rod: An outer metal layer applied to a cable for mechanical protection. Armor Rods are comprised of factory formed wire, designed to be applied to a range of conductor sizes.

Armored Cable: A cable provided with a wrapping of metal, usually steel wires or tapes, primarily for the purpose of mechanical protection.

armoured cable : Cable with a metal protective covering.

Armoured Hose: An armoured hose is a specialized hose in which a metal jacket is applied to the exterior of the hose to add strength and durability. The metal jacket is typically a braided jacket of metal fibers in order to minimize the impact of the armour on hose flexibility.

arm's reach : A zone of accessibility to touch, extending from any point on a surface where persons usually stand or move about to the limits which a person can reach with a hand in any direction without assistance.

Arnolds Fatigue Test: A test for fractures using 850 cyclic stress reverses per min., recording the number of cycles required to produce fracture. Named after John Arnold, British Metallurgist)

Aromatics: Hydrocarbons characterized by unsaturated ring structures of carbon atoms. Commercial petroleum aromatics are benzene, toluene, and xylene (BTX).

Arpa, advanced research projects agency. : Us agency that developed the first major packet-switched network, arpanet.

Arq, automatic request for transmission. : An error control method in which the receiving device informs the transmitting device which transmission blocks were received successfully; the transmitting device retransmits any blocks not successfully received.

Array: Array several antennas arranged together in space and interconnected to produce a desired radiation pattern.

Array: For photovoltaic systems, a number of photovoltaic modules connected together to provide a single electrical output. Also see "Photovoltaic Array".

Array: Any number of photovoltaic modules connected together to provide a single electrical output. Arrays are often designed to produce significant amounts of electricity.

Array: An array is a systematic arrangement of similar objects in matrix

Array factor : Array factor in antenna theory, the re-sulting radiation pattern of an array when each antenna in the array is replaced by an isotropic radiator.

Array processor : Array processor an array of processor elements operating in lockstep in response to a single instruction and performing compu-tations on data that are distributed across the processor elements.

Arrester: Short for Surge Arrester, a device that limits surge voltage by diverting it.

arrester: A device placed from phase to ground, or phase to phase, whose nonlinear impedance characteristics provide a path for high-amplitude transients.

Arrester: Devices used to protect the insulation and conductors of the system from the damaging effects of lightning are also known as Lightning arrester

Artifact : Artifact an error or aberration in a signal that is the result of aliasing, a quantization error, some form of noise, or the distorting effects of some type of processing. See also outlier.

Artificial Aging: An aging treatment above room temperature.

Artificial neuron : Artificial neuron an elementary analog of a biological neuron with weighted inputs, an internal threshold, and a single output. When the activation of the neuron equals or exceeds the threshold, the output takes the value C1, which is an analog of the firing of a biological neuron. When the activation is less than the threshold, the output takes on the value 0 (in the binary case) or -1 (in the bipolar case)

Artificial skin : Artificial skin artificial skin is a de-vice which, when pressed against the surface by an object, causes local deformations that are measured as continuous resistance varia-tions. The latter are transformed into electri-cal signals whose amplitude is proportional to the force being applied to any given point on the surface of the material of the device.

As received coal: Coal in the condition as received by the user.

ASAP/RABET : ASAP/RABET acronym for a computer code for optical systems by BRO, Inc., for standard optical analysis and stray-light anal-ysis such as light-scattering.

Asbestos: A group of naturally occurring minerals that separate into long, thin fibers. Asbestos was used for many years to insulate and fireproof buildings. In the 1989 CBECS, information on asbestos in buildings was collected (Section R of the Buildings Questionnaire) for the U.S. Environmental Protection Agency (EPA). Asbestos treatment methods include removal, encapsulation or sealing, and enclosure behind a permanent barrier.

Ascii terminal. : A terminal that uses ascii; usually synonymous with asynchronous terminal and with dumb terminal.

Ascii, american standard code for information interchange. : A 7-bit-plus-parity character set or code established by ansi to achieve compatibility between data services; sometimes called usascii, the usa standard code for information interchange; normally used for asynchronous transmission. Equivalent to the iso 7-bit code.

ASD: Aluminum Standards and Data published by the Aluminum Association.

Ash: Impurities consisting of silica, iron, alumina, and other noncombustible matter that are contained in coal. Ash increases the weight of coal, adds to the cost of handling, and can affect

its burning characteristics Ash content is measured as a percent by weight of coal on an "as received" or a "dry" (moisture-free, usually part of a laboratory analysis) basis.

Ash Box: Brick lined collection point for slag and ash.

Ash Tank: Holding tank for ashes. The tank is located outside the boiler house. The ashes are dumped once or twice a week, depending on the ash accumulation.

Askania: 1.) A strip centering device consisting of two electric eyes to ensure that the strip will stay centered during re coiling. 2) Device with an electronic eye which is associated with tracking of strip going through the side trimmers.

Askeral: A generic term for a group of synthetic, fire-resistant, chlorinated aromatic hydrocarbons used as electrical insulated fluids.

Askeral: Askeral are group of synthetic, fire-resistant, chlorinated aromatic hydrocarbons used as electrical insulated fluids

Aspect ratio : Aspect ratio (1) the size invariant ratio of length to width for a rectangular box enclosing a shape, the orientation of the box being chosen to maximize the ratio. This measure is used to characterize object shapes as a preliminary to, or as a quick procedure for, object recognition. the ratio of width to height for an image or display. in television or motion pictures, the algebraic ratio of picture width to height. At present, the television format in the United States consists of a width to height ratio of 4 to 3.

Asphalt: A dark brown-to-black cement-like material obtained by petroleum processing and containing bitumens as the predominant component; used primarily for road construction. It includes crude asphalt as well as the following finished products cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. Note The conversion factor for asphalt is 5.5 barrels per short ton.

Asphalt (refined): See Asphalt.

Aspheric : Aspheric description of optical elements whose curved surfaces are not spherical, often used to reduce aberrations in optical systems.

Asr, automatic send/receive teleprinter. : Teleprinter equipped with paper tape, magnetic tape, or a solid state buffer that allows it to transmit and receive data unattended. Compare with ksr and ro.

As-received condition or as-received basis (coal): Coal in the condition as received by the consumer or the laboratory analyzing the coal.

Assembler : Assembler (1) a computer program that translates an assembly-code text file to an object file suitable for linking. A program for converting assembly language into machine code.

Assembly Fit: Refers to two parts designed for mating assembly and requiring exact dimensions and contours to assure a proper fit.

Assembly identifier: A unique string of alphanumeric characters that identifies an assembly, bundle, or canister for a specific reactor in which it has been irradiated.

Assembly type: Each assembly is characterized by a fabricator, rod-array size, and model type. An eight-digit assembly type code is assigned to each assembly type based on certain distinguishing characteristics, such as the number of rods per assembly, fuel rod diameter, cladding type, materials used in fabrication, and other design features.

Assert : Assert (1) raising the voltage on a wire to the "high" state, usually as a signal to some other unit. To make an assertion.

Assertion : Assertion (1) a Boolean expression for stating the right behavior of the program or, if hardware implemented, of a circuit, a logical expression specifying a program state that must exist or a set of conditions that program variables must satisfy at a particular point during program execution.

Assessment work: The annual or biennial work performed on a mining claim (or claims), after claim location and before patent, to benefit or develop the claim and to protect it from relocation by third parties.

Assignment (of a radio frequency or a radio frequency channel) : Authorisation given by an designated authority for an electromagnetic emitter to use a radiofrequency or radiofrequency channel under specified conditions.

Assistance for heating in winter: Assistance from the Low-Income Home Energy Assistance Program (LIHEAP). The purpose of LIHEAP is to assist eligible households to meet the costs of home energy, i.e., a source of heating or cooling residential buildings.

Assistance for weatherization of residence: The household received services free, or at a reduced cost, from the Federal, State, or local Government. Any of the following services could have been received * Insulation in the attic, outside wall, or basement/crawlspace below the floor of the house * Insulation around the hot water heater * Repair of broken windows or doors to keep out the cold or hot weather * Weather stripping or caulking around any windows or doors to the outside * Storm doors or windows added * Repair of broken furnace * Furnace tune-up and/or modifications * Other home energy-saving devices.

Associate mode : Associate mode an operating mode of content addressable memories, in which a stored data item is retrieved that contains a field that matches a given key.

Associated: Associated reference directions a method assigning the current and voltage directions to an electrical element so that a positive current-voltage product always means that the element is absorbing power from the network and a negative product always means that the element is delivering power to the network. This method of assigning directions is used in most circuit simulation programs.

Associated natural gas: See Associated-dissolved natural gas and Natural gas.

Associated-dissolved natural gas: Natural gas that occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved gas). Also see Natural gas.

Associative processor: Associative processor a parallel processor consisting of a number of processing elements, memory modules, and input-output devices under a single control unit. The capability of the processing elements is usually limited to the bit-serial operations.

Associativity : Associativity In a cache, the number of lines in a set. An n-way set associative cache has n lines in each set. (Note: the term “block” is also used for “line.”)

Assurance.: The confidence that a system or product or a feature of a system or product is free from vulnerability. (nato)

Astable multivibrator: Astable multivibrator the circuit that is obtained from a closed-loop regenerative system that includes two similar amplifiers of high gain connected with each other via coupling circuits with reactance elements. More frequently are used RC-coupling circuits (free-running RC-multivibrators, emitter-coupled multivibrators), yet RL-circuits, usually as transformer coils, may be used as well (magnetic multivibrators).

Astigmatism : Astigmatism a defect associated with optical and electrostatic lenses where the magnification is not the same in two orthogonal planes; common where beam propagation is

not along the axis of rotation of the system.

ASTM: American Society for Testing and Materials

ASTM: American Society for Testing and Materials. ASTM is located at 1916 Race Street, Philadelphia, PA 19103.

ASTM Standards: A series of documents, approved and published by ASTM, that include specifications or requirements, practices, guides, test methods, etc., covering various materials, products, systems or services. In the steel industry, the steel related ASTM standards are used by both the producers and users to ensure that a steel product or service meets all intended requirements. See American Society for Testing and Materials.

asymmetric: Not possessing symmetry. Unequal distribution about one or more axes.

Asymmetric digital subscriber line (ADSL): A communication technology in which the downstream data rate is higher than the upstream rate.

Asymmetric digital subscriber line (ADSL) : Asymmetric digital subscriber line (ADSL) a digital subscriber line (DSL) in which the rate from central switching office (CO) to customer premise is much faster than the rate from customer premise to CO.

Asymmetric multiprocessor: Asymmetric multiprocessor (1) a machine with multiple processors, in which the time to access a specific memory address is different depending on which processor performs the request. In contrast with a symmetric multiprocessor, asymmetric multiprocessor is a multiprocessor in which the processors are not assigned equal tasks. The controller (master) processor(s) are assigning tasks to (slave) processors and controlling I/O for them.

Asymmetric multivibrator: Asymmetric multivibrator a multivibrator where the output voltage represents a train of narrow pulses. Most asymmetric multivibrators use a slow charge of a large timing capacitor by a small current (or via a large resistor) and a fast discharge of this capacitor via a switch. The charge process determines the duration of space; the mark duration, which coincides with the time allowed for discharge of the timing capacitor, is usually determined by a small time constant of the circuit controlling the switch. Asymmetric multivibrators find applications in voltage-to-frequency converters. Also called multivibrators with a small mark/space ratio.

Asymmetrical silicon controlled rectifier(ASCR) : Asymmetrical silicon controlled rectifier(ASCR) (1) an inverter grade SCR fabricated to have limited reverse voltage capability. Fabrication with asymmetrical voltage blocking capability in the forward and reverse direction permits reduction of turn-on time, turn-off time, and conduction drop. (2) a thyristor that has limited conduction in the reverse direction to gain increased switching speed and low forward voltage drop. See also silicon controlled rectifier (SCR).

Async. : Short for asynchronous or for asynchronous transmission

Asynchronous: An event that occurs at an arbitrary time, without synchronization to a reference clock. May refer to network messaging, in which a node sends a message without waiting for the receiver to signal that it is ready to receive.

asynchronous: Not synchronous. Especially used with electric machines to denote that the magnetic field and the rotation are not exactly the same.

Asynchronous balanced mode (ABM): In HDLC a communication mode in which all the stations are equal.

Asynchronous character. : A binary character used in asynchronous transmission which

contains equal-length bits, including a start bit and one or more stop bits which define the beginning and end of the character.

Asynchronous modem. : A modem that uses asynchronous transmission and, therefore, does not require timing synchronization with its attached dte or the remote modem; also used to describe a modem which converts asynchronous inputs from the dte to synchronous signals for modem-to-modem transmission.

Asynchronous protocol: A set of rules for asynchronous transmission.

Asynchronous response mode (ARM): A communication mode between a primary and a secondary device in which the secondary is allowed to initiate a transmission.

asynchronous terminal. : A terminal that uses asynchronous transmission; usually synonymous with ascii terminal and dumb terminal.

Asynchronous time division multiplexing: Time division multiplexing in which the link time is allocated dynamically according to the activity of the links.

Asynchronous transfer mode (ATM): A wide area network protocol featuring high data rates and equal sized packets; ATM is suitable for transferring text, audio, and video data.

Asynchronous transfer mode (ATM) : Asynchronous transfer mode (ATM) method of multiplexing messages onto a channel in which channel time is divided into small, fixed-length slots or cells. In ATM systems the binding of messages to slots is done dynamically, allowing dynamic band-width allocation. ATM is asynchronous in the sense that the recurrence of cells containing information from an individual user is not necessarily periodic.

Asynchronous transmission: Transfer of data with start and stop bits(s) and a variable time interval between data units.

Asynchronous transmission. : Method of sending data in which the interval between characters may be of unequal length; since asynchronous characters are used, no additional synchronizing or timing information need be sent. Also called start-stop transmission. Contrast with synchronous transmission.

Asynchronous. : A communications channel capable of transmitting data but not timing is called asynchronous. Strictly speaking, the correct terminology is anisochronous.

AT bus : AT bus typically used in personal computer IBM AT for connecting adapters and additional memory boards. It is called also 16 bit ISA bus since it presents a data bus at 16 bit. It presents an additional connector with respect to the classical ISA bus (at 8 bit) of IBM pcs based on Intel 8088. See also EISA.

at wt: The abbreviation for atomic weight.

ATBC: Acetyl Tributyl Citrate.

ATC: Available Transfer Capacity

Atdm, asynchronous time-division multiplexor. : A tdm that multiplexes asynchronous signals by oversampling; also, infrequently used to mean concentrator.

Atmosphere: A measure of pressure equal to about 14.7 psi.

atmosphere: Unit of pressure corresponding to standard atmospheric pressure. It is taken as the pressure that will support a column of mercury 760 mm high. It is also equal to 1.013105 pa

Atmosphere : Atmosphere a convenient measure of pressure. 1 std atm = 14.696 psia (pounds per square inch absolute).

Atmosphere Valve: A valve that is located in the exhaust line of a turbine and is designed to open and get a positive pressure in the exhaust line.

Atmosphere, Furnace: Gases with which metal is in contact during melting or heat treating.

Atmosphere, Neutral: Furnace atmosphere which is neither oxidizing nor reducing can be made up of an inert gas e.g. argon, or the products of combustion.

Atmosphere, Oxidizing: Furnace atmosphere which gives off oxygen under certain conditions or where there is an excess of oxygen in the product of combustion, or the products of combustion are oxidizing to the metal being heated.

Atmosphere, Reducing: Furnace atmosphere which absorbs oxygen under suitable conditions or in which there is insufficient air to completely burn the fuel, or the product of combustion is reducing to the metal being heated.

Atmospheric attenuation : Atmospheric attenuation decrease in the amplitude of a signal propagating through the atmosphere, due primarily to absorption and scatter.

Atmospheric crude oil distillation: The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 600 degrees to 750 degrees Fahrenheit (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

Atmospheric duct : Atmospheric duct a thin layer of atmosphere near the earth that acts as a waveguide, the electromagnetic field, trapped within the duct, can travel over long distances with very little attenuation.

Atom: A particle of matter which cannot be broken up by chemical means. Atoms have a nucleus consisting of positively-charged protons and uncharged neutrons of the same mass. The positive charges on the protons are balanced by a number of negatively-charged electrons in motion around the nucleus.

Atom : Atom a particle of matter indivisible by chemical means, which is chemically neutral. It is the fundamental building block of the chemical elements.

Atomic beam : Atomic beam a source of atoms traveling primarily in one direction. In practice, atomic beams are usually realized by the expansion of an atomic vapor into a vacuum through a small aperture. The resulting expanding cloud of atoms is usually made nearly unidirectional by a collimator that blocks or otherwise removes all atoms not propagating within a narrow range of angles.

Atomic Hydrogen Weld: Arc welding with heat from an arc between two tungsten or other suitable electrodes in a hydrogen atmosphere. The use of pressure and filler metal is optional.

atomic mass unit amu: Unit used for expressing masses of isotopes of elements. $1 \text{ a.m.u.} = 1.661 \times 10^{-27} \text{ kg}$

Atomic vapor : Atomic vapor a material composed of atoms that preferentially exist as monomers in the vapor phase.

Atomizing Steam: Low pressure steam which is introduced to the oil gun to help atomize the oil, to assist the burning process, and to keep the oil gun from plugging.

ATP: Alternative Transient Program

ATPV: Arc Thermal Performance Value

Attachment : Attachment one of the events which precede a lightning stroke to the earth. Attachment occurs when the stepped leader from the thundercloud makes contact with one of several streamers which emanate from the ground or structures on the earth. The return

stroke follows immediately. See streamer, stepped leader, return stroke.

Attachment process : Attachment process a process that occurs in lightning when one or more stepped leader branches approach within a hundred meters or so of the ground and the electric field at the ground increases above the critical break-down field of the surrounding air. At that time one or more upward-going discharges is initiated. After traveling a few tens of meters, one of the upward discharges, which is essentially at ground potential, contracts the tip of one branch of the stepped leader, which is at a high potential, completing the leader path to ground.

Attachment unit interface (AUI): A 10Base5 cable that performs the physical interface functions between the station and the transceiver.

Attemperator: Header connecting the primary and finishing superheaters into which feed water is sprayed to control the final temperature of the steam leaving the boiler.

Attendant: An employee assigned to remain immediately outside the entrance to an enclosed or other space to render assistance as needed to employees inside the space.

Attenuation: The loss of signal energy due to the resistance of the medium.

Attenuation: Opposite of gain

attenuation: Loss of signal power or amplitude suffered during its transmission through a medium.

Attenuation: (1) The ratio of the input to output power levels in a network (transmission line) when it is excited by a matched source and terminated in a matched load. (2) Power loss in an electrical system.

Attenuation : Attenuation the exponential decrease with distance, in the amplitude of an electric signal traveling along a very long transmission line due to losses in the supporting medium. In electromagnetic systems attenuation is due to conductor and dielectric losses. In fiber optic systems attenuation arises from intrinsic material properties (absorption and Rayleigh scattering) and from waveguide properties such as bending, microbending, splices, and connectors.

Attenuation. : Deterioration of signals as they pass through a transmission medium; generally, attenuation increases (signal level decreases) with both frequency and cable length. Measured in terms of levels or decibels. Contrast with gain.

attenuator: A passive device used to reduce signal strength.

Attenuator : Attenuator a device or network that absorbs part of a signal while passing the remainder with minimal distortion.

Attitude. : The aspect of a satellite orbital plane with respect to earth

atto (a): Decimal sub-multiple prefix corresponding to 10^{-18}

Attractor : Attractor an asymptotic state of a dynamical system of which there are three basic types. Either (i) the system comes to rest and the attractor is a fixed point in state space, (ii) the system settles into a periodic motion known as a limit cycle, or (iii) the system enters a chaotic motion, in which case the attractor is called strange.

Attribute : Attribute a special function in Pawlak's information system. Pawlak's information system S is a pair $\langle U, A \rangle$ where the set U is called the universe and has n members denoted x_i , while the set A consists on m function on the universe U . These functions are called the attributes and denoted a_j . The attributes are vector-valued functions that may be interpreted, for example, as issues under negotiation by the members of the universe U . An example of an

attribute is a function of the form

Attribute authority (aa).: An authority, which assigns privileges by using attribute, certificates

Attribute authority revocation list (aarl). : A revocation list containing a list of references to attribute certificates issued to aas that are no longer considered valid by the issuing authority.

Attribute certificate revocation list (acrl). : A revocation list containing a list of references to attribute certificates that are no longer considered valid by the issuing authority.

Attribute certificate.: A data structure digitally signed by an aa, which binds some attribute values with identification about its holder.

Attribute set : Attribute set a set of vectors (signals) lying in metric space that possess prescribed properties.

Attrition: A natural reduction in work force as a result of resignations, retirements or death. Most unionized companies cannot unilaterally reduce their employment levels to cut costs, so management must rely on attrition to provide openings that they, in turn, do not fill. Because the median ages of work forces at the integrated mills may be more than 50, an increasing number of retirements may provide these companies with added flexibility to improve their competitiveness.

Atw, advanced tactical workstation. : The name of the pc workstation and software which displays near real-time elint information from us satellite systems (the broadcast is called trap)

Audio: Audio science of processing signals that are within the frequency range of hearing, that is, roughly between 20 hertz and 20 kilo-hertz. Also, name for this kind of signal.

audio amplifier: An amplifier designed to be used in the audio range of frequencies.

Audio Amplifiers: An audio amplifier is an electronic device that amplifies, or increases, low power audio signals before delivering them to the speaker outlet. Amplifiers contain components to adjust the frequency and amplitude of the signal and to filter out distortion and provide a clean and clear output.

Audio Attenuators: An audio attenuator is an electronic component used to reduce the amplitude of the signal, thereby reducing the volume of the signal. The attenuator works by using electrical resistance in the circuit to reduce the signal strength without affecting the waveform and resulting clarity of the audio signal.

Audio channels : Audio channels the portion of the circuit containing frequencies that correspond to the audible sound waves. Audio frequencies range from approximately 15 hertz to 20,000 hertz.

Audio coding : Audio coding the process of compressing an audio signal for storage on a digital computer or transmission over a digital communication channel.

audio frequency: A frequency corresponding to audible sound waves, and thus corresponds to a frequency between 20 Hz and 20 kHz.

Audio frequency. : A frequency which can be detected as a sound by the human ear. The range of audio frequencies extends from approximately 20 to 20,000 hertz.

Audio visual. : A generic term pertaining to application and utilization technology of electro, chemical, mechanical and optical media to record and/or reproduce audible signals or visual images or combinations thereof, and the materials that permit their use.

audit. : The process of conducting an independent review and examination of system records and activities in order to test for adequacy of system controls, to ensure compliance with established policy and operational procedures, and to recommend any indicated changes in controls, policy, or procedures (ca). Auscannzukur naval c4 organisation (auscannzukur). Auscannzukur is an Organisation formed among the navies of australia, canada, new zealand, the united kingdom and the united states to promote interoperability between member nations by indentifying areas of risk and implementing technical or policy based solutions and standards to mitigate these risks.

Auger Conveyor: An auger conveyor, also known as a screw conveyor, moves solid or liquid material by moving it on the threads of the auger. The auger is usually located in either a trough or tube and is oriented at a slight incline or vertically. As the auger rotates, material clings to the augur surface and is transported up the shaft. The pitch of the auger - the linear distance is takes to complete one complete revolution around the shaft - determines how slowly or quickly the material progresses from one end to the next at a given shaft speed.

Auger mine: A surface mine in which the coal bed is removed by means of a large diameter drill. Usually operated only when the overburden becomes too thick for economical strip mining.

Augmented code : Augmented code a code constructed from another code by adding one or more code-words to the original code.

Aural subcarrier : Aural subcarrier in a composite tele-vision signal, the frequency division multi-plexed carrier placed outside the visual pass-band that carries the audio modulation. In the NTSC (United States) system, it is placed 4.5 Mhz higher than the visual carrier.

Ausenic Grain Size: The size of the grains in steel heated into the austenitic region.

Austenitic: Phase in certain steels, characterized as a solid solution, usually of carbon or iron carbide, in the hamma form of iron. Such steels are known as austenitic. Austenite is stable only above 1333 (degrees) F. in a plain carbon steel, but the presence of certain alloying elements, such as nickel and manganese, stabilizes the austenitec form, even at normal temperatures.

Austenitic Steel: Steel which, because of the presence of alloying elements, such as manganese, nickel, chromium, etc., shows stability of Austenite at normal temperatures.

Austenitizing: Forming austenite by heating a ferrous alloy into the transformation range (partial austenitizing) or above the transformation range (complete austenitizing).

Austentite: A solid solution of one or more elements in face centered cubic iron.

Authenticate. : A verb commanding or requesting validation of a communication by use of an appropriate authenticator. See authenticator.

Authenticating state: In PPP, an optional state that verifies the identity of the receiver.

Authentication: Verification of the sender of a message.

Authentication (1). : Evidence of proper signature or seal that a document is genuine and official.

Authentication (2). : A security measure designed to protect a communication system against fraudulent transmissions.

Authentication (3). : Measures designed to provide protection against fraudulent transmission and imitative communication deception by establishing the validity of a transmission, message, station, or individual. (ca)

Authentication system. : A system designed for the purposes of authentication, i.e. To serve as a secure means of establishing the authenticity of a transmission or message or of challenging the identity of a station.

Authentication test element. : An element employed in an authentication system for deriving an authenticator.

Authentication token. : Information conveyed during a strong authentication exchange, which can be used to authenticate its sender.

Authentication, message. : A security measure designed to establish the authenticity of a message by means of an authenticator within the transmission derived from certain predetermined elements of the message itself.

Authentication, net. : An authentication procedure by which a net control station authenticates itself, and all other stations in the net systematically establishing their authenticity.

Authentication, station. : A security measure designed to establish the authenticity of a transmitting or receiving station, either by the challenge and reply or transmission authentication method.

authentication, transmission. : A collective term which includes self authentication, station authentication, and sometimes message authentication. By this procedure, a station may establish the authenticity of its own transmission.

Authenticator. : A letter, numeral or group of letters or numerals (or both), attesting to the authenticity of a message or transmission.

Authority certificate. : A certificate issued to an authority (eg either to a certification authority or to an attribute authority).

Authority. : An entity, responsible for the issuance of certificates. Two types are defined in this specification; certification authorities which issues public-key certificates and attribute authority which issues attribute certificates.

Authorized cash distribution to municipality: The authorized cash distributions to the municipality from the earned surplus of the utility department.

Authorized employee: An employee who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Auto Shutdown: auto shutdown may be a computer program used to auto power off any system after a specific operation.

Auto Stamping Plant: A facility that presses a steel blank into the desired form of a car door or hood, for example, with a powerful die (pattern). The steel used must be ductile (malleable) enough to bend into shape without breaking.

Auto-answer. : A type of modem used on the public telephone network that automatically sends an answering tone in response to an incoming call.

Autoassociative backpropagation network : Autoassociative backpropagation network a multilayer perceptron network that is trained by presenting the same data at both the input and output to effect a self-mapping. Such networks may be used for dimensional reduction by constraining a middle, hidden layer to have fewer neurons than the input and output layers.

Autocad Software: AutoCAD software is a computer aided design (CAD) package developed

and maintained by Autodesk, Inc. AutoCAD enables the user to create 2D and 3D drawings and models, provide dimensions, and export model information to formats consistent with engineering analysis software and manufacturing processes. AutoCAD also supports customization through an Application Programming Interface (API) that is written in C++ and allows the user to create custom modeling functions.

Autoclaves: An autoclave is any device used to create a customized environment, changing pressure and/or temperature, for the purpose of accomplishing a task. Autoclaves are used in the places like the medical industry to sterilize equipment and in the materials industry to assist in the curing of composite material components.

Autoconfiguration : Autoconfiguration a process that determines what hardware actually exists during the current instance of the running kernel at static configuration time. It is done by the autoconfiguration software that asks the devices to identify themselves and accomplishes other tasks associated with events occurring during the autoconfiguration of devices. For instance, PCI devices have auto-configuration capabilities and do not have to be configured by users.

Autocorrelator : Autocorrelator a circuit that computes the autocorrelation function.

Auto-dial. : A type of modem used on the public telephone network that automatically originates calls (dials the desired number).

Autofrettage: Pre stressing a hollow metal cylinder by the use of momentary internal pressure exceeding the yield strength.

Autogenous Mills: An autogenous mill is a type of mill used to break and and grind rocks. The rocks are placed in a large cylinder, or drum, and the mill is rotated so that the rocks continuously tumble and fall to the bottom of the drum. As this process is repeated, the rocks are broken and eventually ground due to the impact load of the falling rocks.

Automated Gantry Systems: An Automated Gantry System is a computer controlled positioning system integrated for supporting a robot, cutting head, welder, crane, or other device overhead of the work area.

Automatic: Describes the status of the operation when the O2 pulpit has control and the boiler logic has control.

Automatic : Automatic (1) property pertaining to a process or a device that functions without intervention by a human operator under specified condition(2) a spring-loaded tension sleeve into which a conductor or other wire is inserted for tensioning and attachment to a pole or other fixture.

Automatic allocation: Automatic allocation allocation of memory space to hold one or more objects whose lifetimes match the lifetime of the activation of a module, such as a subroutine. Automatic allocations are usually made upon entry to a subroutine.

Automatic circuit re-closer: A self-controlled device for interrupting and re-closing an alternating current circuit with a predetermined sequence of opening and re-closing followed by resetting, hold-closed, or lockout operation.

Automatic data processing network. : See data processing network.

Automatic error detection and correction system (edc). : A system employing an error detecting code and so conceived that any false signal initiates a repetition if the transmission of the character is incorrectly received.

Automatic error detection.: A method of transmission in which the aim is to detect and

automatically indicate a mutilation of the sent signal.

Automatic frequency control (afc). : A circuit or device which maintains a receiver or transmitter on a desired frequency.

Automatic gain control (agc).: A circuit or device which regulates the gain of a receiver or amplifier so that the output tends to remain constant though the incoming signal may vary in strength.

Automatic Gauge Control: Using hydraulic roll force systems, steelmakers have the ability to control precisely their steel sheet's gauge (thickness) while it is traveling at more than 50 miles per hour through the cold mill. Using feedback or feed forward systems, a computer's gap sensor adjusts the distance between the reduction rolls of the mill 50 60 times per second. These adjustments prevent the processing of any off gauge steel sheet.

Automatic generation control (AGC) : Automatic generation control (AGC) phrase describing the computer-based process by which electric utilities control individual generating stations to maintain system frequency and net interchange of power on a highly interconnected transmission grid. Automatic generation control (AGC) systems monitor grid frequency, actual and scheduled power flows, and individual plant output to maintain balance between actual and scheduled power production, both within transmission control areas and at individual generating stations. Control is generally accomplished by adjusting the speed control (or droop) characteristics of individual generating units. Control actions are determined by planned production schedules and power exchange agreements among participating utilities.

Automatic landing systems. : Systems in which the automatic devices land aircraft without pilot assistance.

Automatic level control (ALC) : Automatic level control (ALC) a feedback system where an RF signal from a source is sampled, detected, and sent to a voltage controlled attenuator to maintain a constant amplitude output over a specified band of frequencies.

Automatic line sectionalizer: A selfcontained circuitopening device that automatically opens the main electrical circuit after sensing and responding to a predetermined number of successive main current impulses.

Automatic line sectionalizer: A sectionalizer is a protective device that automatically isolates a faulted section of line from the rest of the distribution system.

Automatic message switch.: See switching, communications system and switching, automatic.

Automatic number equipment. : A type of equipment which automatically transmits a transmission identification.

Automatic Recloser: An automatic switch used to open then reclose following an over current event on a distribution voltage (medium voltage) line.

Automatic Recloser: This is a type of circuit breaker used in overhead distribution, it automatically detect the open circuit and close it.

Automatic repeat request (ARQ): An error control method in which correction is made by retransmission of data.

Automatic rq. : An automatic error detection-correction technique employed in telegraph systems whereby the return channel is used to obtain repetition of corrupted received signals until they are received uncorrupted.

automatic search jammer (search lock jammer). : A system comprising a search Receiver and a jamming transmitter which first searches for signals having specific characteristics and then automatically jams them.

Automatic set-back or clock thermostat: A thermostat that can be set to turn the heating/cooling system off and on at certain predetermined times.

Automatic Stop: A device which may be attached to any of several parts of a machine tool to stop the operation of the machine at any predetermined point.

Automatic tracking. : Tracking in which the servo mechanism follows a signal or target automatically.

Automatic transfer switch: Automatic transfer switch na self-acting switch which transfers one or more load conductor connections from one power source to another.

automatic transfer switch: A switch that automatically transfers electrical loads to alternate or emergency-standby power sources.

Automatic volume control (avc). : See automatic gain control (agc).

automation: The application of mechanical or electronic techniques to minimise the use of manpower in any process.

Automation : Automation refers to the bringing to-gether of machine tools, materials handling process, and controls with little worker inter-vention, including a continuous flow production process that integrates various mechanisms to pro-duce an item with relatively few or no worker operations, usually through electronic con-trol; self-regulating machines (feedback) that can perform highly precise operations in sequence; and electronic computing machines. In common use, however, the term is of-ten used in reference to any type of advanced mechanization or as a synonym for techno-logical progress; more specifically, it is usu-ally associated with cybernetics.

Automation Engineering: Automation describes the use of computer systems and control hardware such as sensors and programmable logic controllers in order to automate a process, thereby reducing or removing the need for human operators. Automation has become very common and is found to some extent in almost every industry. Automation engineering is the act of designing, implementing and testing automation controls for specific systems. Depending on the industry, automation engineering may require the use of specific components and procedures in order to meet regulatory requirements.

Automaton : Automaton (1) a fundamental concept in mathematics, computer engineering, and robotics. a machine that follows sequence of in-structions. Any automated device (robots, me-chanical and electromechanical chess au-tomata). Automata (plural of automa-ton) theory studies various types of au-tomata, their properties and limitations. See also cellular automaton, finite state machine (FSM).

Automobile and truck classifications: Vehicle classifications for automobiles and light duty trucks were obtained from the EPA (Environmental Protection Agency) mileage guide book. Almost every year there are small changes in the classifications, therefore the categories will change accordingly. The EPA mileage guide can be found at any new car dealership.

Autonomic : Autonomic that part of the nervous system which controls the internal organs.

Autonomous Photovoltaic System: A standalone Photovoltaic system that has no backup generating source. The system may or may not include storage batteries. Most battery systems are designed for a certain minimum number of days or operation before recharging is needed

should suffice

Autonomous system: Autonomous system a dynamic system described by a first-order vector differential equation that is unforced and stationary. In other words, such a system is governed by an equation of the form

Autonomous system: A stand-alone Photovoltaic system that has no back-up generating source. May or may not include storage batteries.

Autoradiograph: A radiograph recorded photographically by radiation spontaneously emitted by radioisotopes that are produced in, or added to the material. This technique identifies the location of the radioisotopes.

autoreclose: A feature of certain circuit breakers where they close automatically after a predetermined time after an automatic opening due to a transient fault.

Autoreclosers: An autorecloser is a component used in electrical power generation. The autorecloser is a specialized type of circuit breaker that has the ability to reclose itself after a fault causes the circuit breaker to trip. Unlike in household wiring where a fault would indicate a problem, autoreclosers are used in the monitoring of overhead power lines, where small faults can be transient in nature and insufficient to warrant shutdown of the entire system.

Auto-regressive moving-average model (ARMA): Auto-regressive moving-average model (ARMA) the discrete-time input–output model in which the current output depends both on its past values (auto-regressive part) and the present and/or past values of the input (moving-average part).

Autotransformer: A power transformer having one continuous winding that is tapped.

Autotransformer: A transformer in which at least two windings have a common section. They are use to either "buck" or "boost" the incoming line voltage.

autotransformer: A transformer in which both the primary and the secondary windings share common turns. It provides no isolation.

Autotransformer: a transformer having part of its winding included in both the input and output circuit. Isolation is not there between the input and output circuits.

Autotransformer : Autotransformer a power transformer that has a single continuous winding per phase, part of this winding being common to both the primary and the secondary sides. As a result, these voltages are not isolated but the transformer is reduced in weight and size. Autotransformers are most suited for relatively small changes in voltage. Three phase autotransformers are by necessity con-nected in a wye configuration.

autotransformer starter: A starter that includes an auto-transformer to furnish reduced voltage for starting an alternating current motor.

Auxiliary Air: A controller for auxiliary air dampers on boilers. For proper combustion on oil fire.

auxiliary contacts: The contacts of a switching device, in addition to the main current contacts, that operate with the movement of the latter. They can be normally open (NO) or normally closed (NC) and change state when operated.

Auxiliary generator: A generator at the electric plant site that provides power for the operation of the electrical generating equipment itself, including related demands such as plant lighting, during periods when the electric plant is not operating and power is unavailable from the grid. A black start generator used to start main central station generators

is considered to be an auxiliary generator.

Auxiliary Hydraulic System: Hydraulic system that supplies the force to run the various hydraulic cylinders associated with the finishing mill which are not taken care of by the A.G.C. or C.V.C hydraulic system.

Auxiliary Oil Pump: A steam or electric pump that maintains oil pressure on the controls and the bearings of a turbo blower when it is not up to maximum speed.

Auxiliary Power: The power required for correct operation of an electrical or electronic device, supplied via an external auxiliary power source rather than the line being measured.

Auxiliary Power: an alternate source of power for primary power source at the station main bus

Auxiliary Pump: Pump on the auxiliary system which supplies the pressure for the system.

Auxiliary Relay: An all-or-nothing relay energized via another relay. An example is a measuring relay, for the purpose of providing higher rated contacts, or introducing a time delay, or providing multiple outputs from a single input.

Auxiliary Relay: A assisting relay to the main relay system in case of open or close state of operating circuit.

Auxiliary winding : Auxiliary winding a winding designed to be energized occasionally for a specific purpose, such as starting a single-phase motor. The power to the winding may be controlled by various means including a timer, centrifugal switch, current sensing relay, or voltage (counter EMF) sensing relay.

Auxiliary Operations: Additional processing steps performed on forgings to obtain properties, such as surface conditions or shapes, not obtained in the regular processing operation.

Availability: Describes the reliability of power plants. It refers to the number of hours the turbines are available to produce power divided by the total hours in a year.

Availability : Availability the probability that a system is operating correctly and is available to perform list functions at the instant of time t . Also defined as the value— outage

Availability (1) : A measure of equipment, system, or network performance - usually expressed in percent; the ratio of operating time to the sum of operating time plus down time. Based on $Mtbf$ and mtr .

Availability (2) : The property of being accessible and usable upon demand by an authorized entity.

Available bit rate (ABR): The minimum data rate in ATM at which cells can be delivered.

Available but not needed capability: Net capability of main generating units that are operable but not considered necessary to carry load and cannot be connected to load within 30 minutes.

Available power gain: Available power gain ratio of power available from a network to the power available from the source.

avalanche: A build up of particles caused by the collision of a high energy particle with any other form of matter. [Note The term is derived from the avalanches occurring in a mountain]

Avalanche breakdown: Avalanche breakdown process that occurs in a semiconductor space charge region under a sufficiently high voltage such that the net electron/hole generation rate due to impact ionization exceeds certain critical value, causing the current to rise indefinitely due to a positive feedback mechanism. The I-R heating caused during this process can per-

manently degrade or destroy the material.

Average Annual Percent Change (Coal): The average annual percent change over a period of several years that is calculated by taking the n th root [where n is the number of years in the period of interest] of the result of the current year's value divided by the value of the first year of the period; this result then has 1 (one) subtracted from it and that result is then multiplied by 100.

Average daily production: The ratio of the total production at a mining operation to the total number of production days worked at the operation.

Average delivered price: The weighted average of all contract price commitments and market price settlements in a delivery year.

Average household energy expenditures: A ratio estimate defined as the total household energy expenditures divided by the total number of households.

Average Maintained Foot-candles (Lighting): $(ILL \times CU \times LLF)/(PS \times RW)$

Average mine price: The ratio of the total value of the coal produced at the mine to the total production tonnage.

Average Number of Employees (coal): The average number of employees working in a specific year at coal mines and preparation plants. Includes maintenance, office, as well as production-related employees.

Average Open Market Sales Price (coal): The ratio, for a specified time period, of the total value of the open market sales of coal produced at the mine to the value of the total open market sales tonnage.

Average power : Average power the average value, taken over an interval in time, of the instantaneous power. The time interval is usually one period of the signal.

Average production per miner per day: The product of the average production per miner per hour at a mining operation and the average length of a production shift at the operation.

Average production per miner per hour: The ratio of the total production at a mining operation to the total direct labor hours worked at the operation.

Average Recovery Percentage (coal): The percentage of coal that can be recovered from known coal reserves at reporting mines, weight averaged for all mines in the reported geographic area.

Average revenue per kilowatthour: The average revenue per kilowatthour of electricity sold by sector (residential, commercial, industrial, or other) and geographic area (State, Census division, and national) is calculated by dividing the total monthly revenue by the corresponding total monthly sales for each sector and geographic area.

Average stream flow: The rate, usually expressed in cubic feet per second, at which water passes a given point in a stream over a set period of time.

average value: The average value of a periodic waveform is defined by taking the mean value of the full-wave rectified waveform.

Average vehicle fuel consumption: A ratio estimate defined as total gallons of fuel consumed by all vehicles divided by (1) the total number of vehicles (for average fuel consumption per vehicle) or (2) the total number of households (for average fuel consumption per household).

Average vehicle miles traveled: A ratio estimate defined as total miles traveled by all vehicles, divided by (1) the total number of vehicles (for average miles traveled per vehicle) or (2) the total number of households (for average miles traveled per household).

Average water conditions: The amount and distribution of precipitation within a drainage basin and the run off conditions present as determined by reviewing the area water supply records over a long period of time.

Average-value model: Average-value model a mathematical representation in which the average value of variables are used to model a system. In electric machines and drives, system variables are typically averaged over various switching intervals. This eliminates the high-frequency dynamics, but preserves the slower dynamics of the system.

Averaging : Averaging the sum of N samples, images or functions, followed by division of the result by N. Has the effect of reducing noise levels. See also blurring, image smoothing, mean filter , noise smoothing, noise suppression, smoothing.

Aviation gasoline (finished): A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. Note Data on blending components are not counted in data on finished aviation gasoline.

Aviation gasoline blending components: Naphthas that will be used for blending or compounding into finished aviation gasoline (e.g., straight run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

avoided capacity cost : Avoided capacity cost of constructing new power plants.

Avoided cost: The minimum amount an electric utility is required to pay an independent power producer, under the PURPA regulations of 1978, equal to the costs the utility calculates it avoids in not having to produce that power (usually substantially less than the retail price charged by the utility for power it sells to customers).

avoided cost : Cost that a utility avoids by purchasing power from an independent power producer (IPP), rather than generating power themselves, or constructing new power plants.

avoided energy cost : Avoided energy cost of fuel and operating and maintaining utility power plants.

A-Weighting: it is used to define the family of curves of measurement of sound pressure level in the International standard

AWG: American Wire Gauge.

AWG : AWG American Wire Gauge, a system of wire sizing used in the USA especially in smaller conductors used in residential and commercial wiring.

AWG, American Wire Gauge: . This term refers to the U.S. standard for wire size.

AWGN : AWGN See additive white Gaussian noise.

Axial Compressors: An axial compressor is a vaned-type compressor in which stationary and rotating blade rows are used to move a fluid in an axial direction aligned with the shaft of rotation. In an axial compressor, the fluid is decelerated as it moves through the blade rows, resulting in a large increase in pressure at the compressor exit. Axial compressors may contain one or more stages of stationary and rotating blade rows depending on the operating conditions, the desired pressure rise, and the required performance characteristics such as efficiency.

Axial Fan: An axial fan is essentially single-stage compressor resulting in a low pressure rise across the blade rows as the air is moved parallel to the shaft. Axial fans are characterized by

the amount of air they move, the rotational speed at which they spin, and the fan static pressure rise. Fan designs are described by a fan characteristic curve which defines the fan performance at a given speed in terms of volume flow and pressure rise.

Axial Flow Pumps: An axial flow pump is a pump in which a blade row is installed inside an axial pipe for the purpose of moving an incompressible fluid through the pipe, parallel to the pump shaft. The pump will include one or more blade rows designed to increase the pressure of the fluid and move it through the pipe. The performance of the pump will be dictated by the rotational speed of the pump, the frictional losses through the blade rows, and the pressure rise achieved.

Axial Impellers: An axial impeller is the rotating component in an axial flow pump. Also known as the rotor, the impeller contains multiple blades to convert the mechanical energy of the shaft into fluid acceleration and pressure rise as the fluid moves through the pump.

Axial Piston Motors: An axial piston motor is one type of hydraulic motor in which hydraulic pressure is converted into motor rotation and torque. In an axial piston motor, hydraulic pressure is used to drive a series of pistons. A gearbox is then used to transfer the axial piston motion into the rotational motion that drives the motor.

Axial Piston Pumps: An axial piston pump is one type of hydraulic pump in which pressure is used to pump a fluid from one location to another. In an axial piston pump, a shaft is attached to a cam plate that may or may not be directly attached to the pistons. As the shaft rotates, the cam plate causes the pistons to move towards or away from the valve plate, thereby pumping fluid as a result of the displacement of the piston. A piston pump is also referred to as a positive displacement pump.

Axial Rolls: In ring rolling, vertically displaceable frame opposite from but on the same centerline as the main roll and rolling mandrel. The axial rolls control the ring height during the rolling process.

axis: Line about which a given body or system is considered to rotate.

Axis of signal communications. : The line or route on which lies the starting position and probable future location of the command post of a unit during a troop movement. The main route along which messages are relayed or sent to and from combat units in the field.

axis of symmetry: Line about which a given figure is symmetrical.

Axle Weigh Bridges: An axle weigh bridge is a large measurement device used to weigh complete vehicles such as trucks and tractor trailers. Weight bridges are usually mounted over a concrete slab, though they can also be mounted over an open pit with support at the edges of the bridge. The weight measurement is accomplished by a collection of load cells distributed under the bridge according to the type and maximum weight of the vehicles to be weighed.

Axon : Axon the conducting portion of a nerve fiber a roughly tubular structure whose wall is composed of the cellular membrane and is filled with an ionic medium. Ayrton is best known as the inventor of a number of electrical measurement devices and as an engineering educator. Ayrton's early work was with the Indian Telegraph Service, after which he studied with William Thomson (Lord Kelvin) in Glasgow. After several more telegraph assignments Ayrton traveled to Tokyo, where he established the first electrical engineering teaching laboratory at the Imperial Engineering College. Among his many inventions he is credited with the ammeter and an improved voltmeter. His wife Bertha was also an active researcher and became the first woman to be admitted to the Institute of Electrical Engineers.

Azimuth: The angle between true north and the projection of a surface normal to the horizontal plane, measured clockwise from the north. As applied to a Photovoltaic array, 180 degrees azimuth means the array faces south.

Azimuth: The angle between the north vector and perpendicular projection of the star down onto the horizon is known as Azimuth. It is measured in degree. In the horizontal coordinate system, azimuth is one of the two coordinates.

Azimuth (1). : A direction expressed as a horizontal angle usually in degrees or mils and measured clockwise from north. Thus, azimuth will be true azimuth, grid azimuth, or magnetic azimuth depending on which north is used.

Azimuth (2). : The angle at the zenith between the observer's celestial meridian and the vertical circle through a heavenly body.

B: Same as AVC. Motor lead wire.

B channel: An ISDN channel type with a 64kbps data rate; the basic user channel; also known as the bearer channel.

B Elevation: The bottom level of the boiler firebox where two oil guns are located. The oil guns are used if the boiler needs extra steam while on oil fire.

B+S: Brown and Sharpe wire gauge-same as AWG.

Ba: Batch Anneal

Babbitt: An antifriction metal alloy used for bearing inserts;made of tin,antimony,lead and copper.

Babinet principle : Babinet principle principle in optics that states that the diffraction patterns produced by complementary screens are the same except for the central spot. It can be rigorously proved both for acoustic and electromagnetic waves. The Babinet's principle for scalar fields is the following: let p be the resultant field in $z > 0$ due to the incident field p_i from $z < 0$ and let p_t be the total field when the same incident wave falls on the complementary screen. Then, in $z > 0$,

Back : Back end that portion of the nuclear fuel cycle which commences with the removal of spent fuel from the reactor.

Back Draft: Reverse taper which would prevent removal of a pattern from a mold or a core from a corebox.

Back Draft: A highly pressurized flow of oxygen or air in a loosed vessel or root or container due to the internal pressure or substance

back emf: The emf set up in the coil of an electric motor, opposing the current flowing through the coil, when the armature rotates.

Back end : Back in a motor, the end that supports the major coupling or driving pulley.

back flashover: Flash-over occurring from an object usually at earth potential (such as a tower) to a line conductor due to the potential of the earthed object rising due to lightning.

Back Gears: Back gear is mounted on lathe machine at backside of headstock to provide a continuous power to lathe to increase the turning power

Back porch : Back porch a 4.7 microsecond region in the horizontal blanking interval of the NTSC composite video signal that contains a burst of eight to ten cycles of the 3.579545 mhz (3.58 mhz) color subcarrier. The back porch occupies 7% of the total horizontal line time; starting at the end of the horizontal line sync signal and ending with the start of the video.

Back Pressure: When some Bessel or container is filled with extra pressure of substance than

the substance tends to flow backward because of over pressure of substance

Back Rake: It is a shelf provided in a car truck or any vehicle at the back side to keep some luggage or things but in some cases it provides as a safety guard in trucks

Back Up Balance: Cylinders that supply the force used to hold the back up rolls in place.

Back Up Ring: Back up ring is generally used as a sealing purpose. It is highly strength materials that hold the back pressure of substance these rings are commonly used in seals and reciprocating shafts

Back Up Roll: It is a preventive rolls which control the flow of work and increase the working of rolling mills

Backbone: High capacity network designed to provide high bandwidth for corporate communication requirements.

Backbone: The major transmission path in a network.

Backbone : Backbone wiring that runs within and between floors of a building and connects local-area network segments together.

Backbone Wiring: The physical interconnections between the entrance facility and various floors or telecommunications closets.

Backbone. : (in packet-switched networks) the major transmission path for a pdn.

Backer (Back Up Plate): Fill the back flowed materials aging in the vessel by some external force is called the backfilled process

Backfeed : Backfeed in power distribution work, power which flows from the secondary lines into the primary lines through the distribution transformer, e.g., from an emergency generator connected to customer load.

Backflash : Backflash an arc which forms along a tower during a lightning strike due to high tower or footing impedance.

Backflow: When some vessel or container is filled with extra pressure of substance than the substance tends to flow backward because of over pressure of substance

Backflow Preventer: A preventer is that which controls the flow of substance and reduces the pressure of substance or liquid and the back flow preventer is used to prevent the back flow of substance

Background : Background (1) refers to the received vector power level of an electromagnetic measurement (usually radar cross section)

Background Noise: The noise which is coming from behind the main voice or volume is called background noise

background noise : background noise the noise that typically affects a system but is produced independent of the system. This noise is typically due to thermal effects in materials, interpreted as the random motion of electrons, and the intensity depends on the temperature of the material. In radio channels, background noise is typically due to radiation that is inherent to the universe and due mainly to radiation from astronomical bodies. There is a fundamental lower bound on the intensity of such noise which is solely dependent on the universe and independent of antenna and receiver design. See also thermal noise, noise temperature, noise figure .

Background radiation: The naturally-occurring ionizing radiation which every person is exposed to, arising from the earth's crust (including radon) and from cosmic radiation.

background subtraction : background subtraction for images, the removal of stationary

parts of a scene by sub-tracting two images taken at different times. For 1-D functions, the subtraction of a con-stant or slowly varying component of the function to better reveal rapid changes.

Backhoe Loaders: A backhoe loader is a type of construction equipment often used in excavating and grading land. A backhoe loader has a central control cabinet with either a large shovel or bucket attachment on the front and an excavating scoop, or digger, on the back end. Backhoe loaders are often equipped with hydraulic supports at the back end of the vehicle in order to provide stability during digging or dumping operations.

Backing Board (Backing Plate): A second bottom board on which molds are opened.

backing memory : backing memory the largest and slowest level of a hierarchical or virtual memory, usu-ally a disk. It is used to store bulky programs or data (or parts thereof) not needed imme-diatly, and need not be placed in the faster but more expensive main memory or RAM. Migration of data between RAM and back-ing memory is under combined hardware and software control, loading data to RAM when it is needed and returning it to the backing store when it has been unused for a while.

Backing Sand: The sand is used for heating the main sand which is used in mould for backing sand mould

backoff : backoff a technique used in amplifiers when operated near saturation that reduces intermodulation products for multiple carri-ers. In its implementation, the drive signal is reduced or backed off. Input backoff is the difference in decibels between the input power required for saturation and that em-ployed. Output backoff refers to the reduc-tion in output power relative to saturation.

Backplane: Multi-conductor assembly into which computer-based boards are inserted. Typically supplies power and allows boards to communicate at high speeds.

backplane bus : backplane bus a special data bus espe-cially designed for easy access by users and allowing the connection of user devices to the computer. It is usually a row of sockets, each presenting all the signals of the bus, and each with appropriate guides so that printed circuit cards can be inserted. A backplane differs from a motherboard in that a back-plane normally contains no significant logic circuitry and a motherboard contains a sig-nificant amount of circuitry, for example, the processor and the main memory.

backpropagation: backpropagation the way in which error terms are propagated in a multilayer neural network. In a single layer feedforward net-work, the weights are changed if there are dif-ferences between the computed outputs and the training patterns. For multiple layer net-works, there are no training patterns for the outputs of intermediate ('hidden') layer neu-rons. Hence the errors between the outputs and the training patterns are propagated to the nodes of the intermediate neurons. The amount of error that is propagated is propor-tional to the strength of the connection.

backpropagation algorithm: backpropagation algorithm a supervised learning algorithm that uses a form of steepest descent to assign changes to the weights in a feedforward network so as to re-duce the network error for a particular input or set of inputs. Calculation of the modifica-tions to be made to the weights in the output layer allows calculation of the required modi-fications in the preceding layer, and modi-fications to any further preceding layers are made a layer at a time proceeding backwards toward the input layer; hence the name of the algorithm.

backscatter : backscatter energy from a reflected electromagnetic wave. In optics, the optical energy that is scattered in the reverse direction from the transmitted optical energy in an optical fiber transmission link or network. The backscattered energy comes from impurities in the fiber; mechanical or environmental effects that cause changes in the attenuation in the fiber; connectors, splices, couplers, and other components inserted into the optical fiber network; and faults or breaks in the optical fiber.

backscattering : backscattering the reflection of a portion of an electromagnetic wave back in the direction of the wave source.

backside bus : backside bus a term for a separate bus from the processor to the second level cache

Back-up facility. : A resource which provides alternate means of maintaining communications should the on-line resource fail.

Backup fuel: In a central heat pump system, the fuel used in the furnace that takes over the space heating when the outdoor temperature drops below that which is feasible to operate a heat pump.

Backup generator: A generator that is used only for test purposes, or in the event of an emergency, such as a shortage of power needed to meet customer load requirements.

Backup power: Electric energy supplied by a utility to replace power and energy lost during an unscheduled equipment outage.

backward error recovery : backward error recovery a technique of error recovery (also called rollback) in which the system operation is resumed from a point, prior to error occurrence, for which the processing was backed up.

Backward explicit congestion notification (BECN): A bit in the Frame Relay packet that notifies the sender of congestion.

Backward Extrusion: The extrusion of materials is in the opposite direction of poring face is called as backward extrusion

backward wave interaction: backward wave interaction interaction between backward propagating microwave electric fields against an electron stream and the electron in the electron beam. The direction of propagating microwaves and the direction of motion of electrons in the beam are opposite each other.

backward wave oscillator (BWO): backward wave oscillator (BWO) a microwave oscillator tube that is based on a backward wave interaction. two single-ended amplifiers are operated in parallel with 90 degree hybrid. Balanced amplifiers feature a low voltage standing wave ratio because of an absorption of reflected power at the terminating resistor of the hybrids.

Backwardation: Market condition where the spot, or current price for a metal is higher than the three month delivery price. This usually indicates immediate demand is perceived to be stronger than long term demand. Not considered to be a normal market state (See Contango).

Bacteria: Bacteria is the smallest form of any substance and plants

Baffle: A single opaque or translucent element to shield a source from direct view at certain angles or to absorb unwanted light.

Bag Dump Stations: Bag dump station is a automatically dust controller which control the flow of dust particle in the air it reverse back the dust particle into the container

Bag Fillers : It a machine which is used for packing of bags. The material automatically poured in the bags by bag filler

Bag Filling Equipment: The equipment which is used on bag filling machine

Bag Handling Conveyors: The conveyor is used to transfer or handle the filled bag. From machine to storage area

Bag house: It's a type of air pollution controller which remove the hazard particle from air released by some chemical or commercial process

Bagging Machines: It a machine which is used for packing of bags. The material automatically poured in the bags by bag filler

Bagpipes. : In electronic warfare. A type of electronic jamming signal consisting of a series of tones repeated continuously.

Bake: To cook something is called backing. Cook in open and make the material hard by heating

Bake Hardenable Steel: It's steel used for making automobile bodies. Because it having the properties of highly strength and highly formability. Both is required for a car outer panel

Baked Core: To produce the core a desired property which is required for process bake the core at some temperature

Baked Strength: Compressive, shear, tensile or transverse strength of a mold sand mixture when baked at a temperature above 231 B0F (111 B0C) and then cooled to room temperature.

Baker Board: A insulated platform used to work above the ground on a pole.

Baker Board: The sub material used under building projects like fiberglass bakerboard not add any structural strength.

Baking: Heating to a low temperature in order to remove gasses. Curing or hardening surface coatings such as paints.

Balance Circuit: A circuit so arranged that the impressed voltages on each conductor of the pair are equal in magnitude but opposite in polarity with respect to ground.

Balance of system: Represents all components and costs other than the Photovoltaic modules. It includes design costs, land, site preparation, system installation, support structures, power conditioning, operation and maintenance costs, indirect storage, and related costs.

Balance Point: The temperature at which the heat pump can no longer provide all the heating requirements of home. At this point a backup heater automatically comes on to assist the compressor in maintaining the temperature set on the thermostat.

balanced code : balanced code a binary line code that ensures an equal number of logic ones and logic zeros in the encoded bit sequence. Also called a DC-free code because the continuous component of the power spectral density of a balanced encoded sequence falls to zero at zero frequency.

Balanced configuration: In HDLC protocol a configuration in which two stations are of the combined type.

balanced line : balanced line symmetric multiconduc-tor transmission line in which the voltage on each conductor along the transmission line has the same magnitude, but the phases are such that the voltage would sum to zero. In a two conductor transmission line, the volt-ages would be equal and 180 degrees out of phase. This is the equivalent of a virtual ground plane or zero E-field plane at the ge-ometric center plane of the transmission line cross section, or balanced with respect to vir-tual ground. Balanced wiring configurations are often used to prevent noise problems such as ground loops.

Balanced Load: Refers to an equal loading on each of the three phases of a three phase system...

Balanced Load: A Three phase Loads on a 3 phase supply system is a Balanced load because it draws equal current from each phase.

balanced load : balanced load a load on a multi-phase power line in which each line conductor sees the same impedance.

balanced mixer : balanced mixer a nonlinear 3-port device (two inputs, one output) used to translate an input signal's frequency component either up or down the frequency spectrum by generating the sum and difference of two or more frequencies present at its inputs. The three ports are termed RF (radio frequency), LO (local oscillator), and IF (intermediate frequency). A balanced mixer translates the frequency components found in the RF input signal to the IF output in such a manner as to minimize the amount of LO noise arriving at the IF. This reduces the mixer's overall noise figure and increases its sensitivity. Other advantages of these mixers include improved local oscillator isolation and linearity and higher power handling ability.

balanced modulator: balanced modulator a modulator in which the carrier and modulating signal are introduced so that the output contains the two sidebands without the carrier.

Balanced polyphase system: A polyphase system in which both the currents and voltages are symmetrical.

Balanced Steel: Steels in which the deoxidisation is controlled to produce an intermediate structure between a rimmed and killed steel, Sometimes referred to as semi killed steels, they possess uniform properties throughout the ingot and amongst their applications are boiler plate and structural sections.

balanced three phase: A three phase voltage or current is said to be balanced when the magnitude of each phase is the same, and the phase angles of the three phases differ from each other by 120° . A star-connected load or a delta-connected load is said to be balanced when the three arms of the star or the delta have equal impedances in magnitude and phase.

Balancing authority (electric): The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time. NERC definition

Balancing item: Represents differences between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions off low data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Ball And Roller Bearings: Ball and roller bearings are types of roller-element bearings used to carry a load with very little frictional resistance between two components. This is accomplished by placing rolling elements - the balls or rollers - between the two elements. Ball bearings use spherical balls between the bearing surfaces and are capable of carrying load in both the radial and axial directions. Roller bearings use cylindrical roller elements and, as a result, are still strong in the radial direction but less so for axial loads.

Ball Bearing: Bearing having no. Of balls in between two cylinder shaped plates which is used for smooth running of any assembly

Ball Bearing Slewing Rings: The ring use to hold the balls of ball bearing

Ball Burnishing: It is a surface finishing process, which increase surface accuracy. It consist of balls that are used in the holes for surface finishing

Ball Check Valve: A ball check valve is a valve that permits one-way of fluid flow. A spherical ball is used to block flow through the valve. If the flow is opposite the direction of the valve, the ball is forced into a tapered constriction of the valve body, and flow is not permitted. Conversely, flow in the direction of the valve forces the ball out of the constriction and allows fluid to pass through the valve.

Ball Mills: It's a roller type of grinding machine, which is mainly used for grinding or surface finishing of balls. Thousand of balls are grind by mill.

Ball Piston Pumps: It's a simple pump having one rotor and round the rotor a separate cylinder for each ball.

Ball Transfer Tables: The table is having the no of balls on it. The table is mainly used for manually transfer the product by rolling on balls

Ball Transfer Units: The ball is placed in a single vertical cylinder and fix it on the table for transferring the product the unit of these cylinder and ball on table is called ball transfer unit

Ball Valve: The ball valve is a one-way valve, which control the flow of substance by open and closed pressure on ball.

Ball Vibrator: The ball vibrator provide the pneumatic power through rotational force of balls

Ballast: A device that by means of inductance, capacitance, or resistance, singly or in combination, limits the lamp current of a fluorescent or high intensity discharge lamp. It provides the necessary circuit conditions (voltage, current and wave form) for start

ballast: A Ballast is an electrical device which is required for all discharge lamps. It limits the current through the lamp, preventing damage to both the lamp and the electrical supply.

Ballast: ballast is a material that is used to provide stability to a vehicle or structure . A tank provided for any system which is called blast tank.

Ballast: Devices that by means of inductance, capacitance or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps, to the required value for proper operation, and also, where necessary, provide the required starting voltage and current.

Ballast Efficacy Factor: Measure used to compare various lighting systems.

Ballast Factor: Measure of light output from lamp operated by commercial ballast, as compared to a reference ballast.

Ballast Hum: Sound made by operating core & coil ballast, generated by the electromagnetic field that transforms the current for discharge lamp use. High frequency solid state ballasts may also make a sound, but at a significantly lower level which is inaudible - except in the case of some solid state ballasts that use non-electronic power factor correction which is relatively "noisy."

Ballast Losses: Power which is supplied to the ballast but is not converted into light energy.

Ballast noise rating: Ballast noise ratings are designated by letters starting with letter A (the quietest) through F. The rating A is best for applications where the surrounding and

competitive noise level may be at a minimum.

Ballast Performance Factors: Measurements that allow the comparison of various ballasts in terms of their power efficiency and ability to produce light. Include power factor, ballast factor and ballast efficacy factor.

Ballast : A device used to provide starting current for certain types of lamps (fluorescent).

Ballast/Transformer: It's a type of transformer which is provide in a fluorescent lighting system to regulate the current to lamp and to provide sufficient voltage to lamp

Baller Stick: It's a stick, which is used for uniformed shaped cutting or pouring. It is mainly used by ice-cream vendor for pouring the ice-cream

Balling Drum: It is a rotating drum which is used for mixer of material for ballast furnace

ballistic galvanometer: Instrument for measuring the total quantity of electricity passing through a circuit due to a momentary current. The period of oscillation of the galvanometer must be long compared with the time during which the current flows.

ballistics: The study of the flight path of projectiles.

Balloon Framing: Its is the designing style of wood house building that used\ some vertical and horizontal walls

Balloon reflector. : In electronic warfare. A balloon-supported confusion reflector to produce fraudulent echoes.

Bamboo Grain Structure: A structure in wire or sheet in which the boundaries of the grains tend to be aligned normal to the long axis and to extend completely through the thickness.

Band: band reference name for a range of fre-quencies. Current defined bands include the following.

Band: The frequency spectrum between two defined limits, especially those delimiting a channel.

Band Dispenser: Device that holds that roll of steel banding.

Band gap: In a semiconductor, the energy difference between the highest valence band and the lowest conduction band.

band gap : band gap the energetic gap between the conduction and valence band edges of a ma-terial (usually referred to semiconductors).

Band gap energy : (EG) The amount of energy (in electron volts) required to free an outer shell electron from its orbit about the nucleus to a free state and, thus, to promote it from the valence level to the conduction level.

Band II: - Band II contains the voltages for supplies to household, and most commercial and industrial installations.

Band Marking: A continuous circumferential band applied to a conductor at regular intervals for indentification.

Band saw: Band saw is a material cutting tool, which consists of a blade with teeth on it. It cut the material in two pieces from one.

Band Saw Steel (Wood): A hardened tempered bright polished high carbon cold rolled spring steel strip produced especially for use in the manufacture of band saws for sawing wood, non ferrous metals, and plastics. Usually carries some nickel and with a Rockwell value of approximately C40/45.

Band splitter. : A multiplexor (commonly an fdm or tdm) designed to divide the composite bandwidth into several independent, narrower bandwidth channels, each suitable for data

transmission at a fraction of the total composite data rate.

band stop filter : band stop filter filter that exhibits frequency selective characteristic such that frequency components of an input signals pass through unattenuated from input to output except for those frequency components coincident with the filter stop-band region, which are attenuated. The stop-band region of the filter is defined as a frequency interval over which frequency components of the input signal are attenuated.

band structure : band structure the energy versus momentum relationship for an electron in a periodic crystal.

Band Wareroom: Wareroom is a storage room (warehouse) where hot bands are kept. (Hot coils)

Banded Structure: Appearance of a metal showing parallel bands in the direction of rolling or working.

Bander: Machine located at each delivery reel to automatically place circumference bands around completed coils.

bandgap energy : bandgap energy in materials with band energy levels, the minimum energy needed to excite a charge carrier from a lower to an upper band. See also absorption edge.

bandgap narrowing : bandgap narrowing reduction of the forbidden energy gap of a semiconducting material due to the narrowing influence of impurities.

bandgap reference : bandgap reference a voltage reference based on the 1.205 V bandgap voltage of silicon.

Banding: The internal picture or internal view of a metal with black and white parallel.

Banding Tool: Bending tool is used to bend some metal. It consists of a jaw and screw on it. The rod kept in the jaw and to bend it tighten the screw

bandlimited : bandlimited a waveform is described as bandlimited if the frequency content of the signal is constrained to lie within a finite band of frequencies. This band is often described by an upper limit, the Nyquist frequency, assuming frequencies from DC up to his upper limit may be present. This concept can be extended to frequency bands that do not include DC.

bandpass filter: A filter designed to pass all frequencies within a band of frequencies.

band-pass filter : band-pass filter (1) a circuit whose transfer function, or frequency response, $H(f)$ is zero or is very small for frequencies not in a specified frequency band.

band-pass network : band-pass network a configuration of solely passive components or combination of active and passive components that will attenuate all signals outside of the desired range of frequency.

band-pass signal : band-pass signal a signal whose Fourier transform or spectrum approaches zero outside a given frequency band. Ideally, the spectrum should equal zero outside the band, but this is difficult to achieve in practice. This may be described mathematically as follows: let $X(f)$ be the Fourier transform of the signal. Then, for a band-pass signal we have $X(f) \neq 0$ for $f \in [f_1, f_2]$, for some $0 < f_1 < f_2$.

bandstop filter: A filter designed to eliminate all frequencies within a band of frequencies.

Band-to-band Auger recombination: Recombination of an electron and a hole occurring between bands of the same energy in which no magnetic radiation is emitted.

Bandwidth: The difference between the highest and lowest frequencies of a composite signal. It also measures the information carrying capacity of a line or a network.

Bandwidth: The data carrying capacity of a transmission path, measured in bits or bytes per second.

bandwidth: Commonly defined as the difference between the upper and lower frequencies of the half power points of the response relative to the reference frequency.

bandwidth: The data a cable can carry measured in bits per second (bps).

bandwidth: The difference between the two dominant critical frequencies of an amplifier. It is also equal to the upper critical frequency when there is no lower critical frequency.

Bandwidth: The bit rate of information capacity. It is expressed as bit per second.

Bandwidth: A measure of the amount of information which can pass through a channel, expressed in Hertz (Hz). Higher bandwidth means greater capacity to carry data.

bandwidth : bandwidth (1) the frequency range of a message or information processing system measured in hertz. (2) width of the spectral region over which an amplifier (or absorber) has substantial gain (or loss); sometimes represented more specifically as, for example, full width at half maximum.

bandwidth efficiency : bandwidth efficiency the ratio of the information rate in bits per second to the required bandwidth in hertz for any digital modulation technique.

bandwidth improvement (BI) : bandwidth improvement (BI) a dB reading that is a comparison of the RF bandwidth of a receiver to the IF bandwidth. Designated as BI, it is $10 \log B_{rf} = B_{if}$.

Bandwidth on demand: A digital service that allows subscribers higher speeds through the use of multiple lines.

bandwidth, necessary. : For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of the information at the rate and with the quality required under specific conditions.

Bandwidth, occupied. : The width of a frequency band such that, below the lower and above the upper frequency limits; the mean powers emitted are each equal to a specified percentage $b/2$ of the total mean power of a given emission. Unless otherwise specified for the appropriate class of emission, the value of $b/2$ should be taken as 0.5 percent.

Bandwidth. : A measure of the information carrying capacity of a communications line or cable, or the difference between the highest and lowest in a range of electromagnetic spectrum (ems) frequencies available for signalling, expressed as either analogue hertz (hz) for cycles per second or in digital bits per second (bps).

bandwidth-distance product : bandwidth-distance product a measure of the information carrying capacity of an op-tical fiber which emphasizes that the band-width is a function of distance. For example, an optical fiber with a specification of 500 MHz-km bandwidth-distance product would have a 500 MHz bandwidth over 1 km, a 50 MHz bandwidth over 10 km or a 1 GHz bandwidth over 0.5 km. See also bandwidth, optical fiber .

bang-bang : bang-bang achieved by a command to the actuator that tells it to operate in either one direction or the other at any time with maximum energy. Bang-bang control is an optimal or subop-timal piecewise constant control whose val-ues are defined by bounds imposed on the am-plitude of control components. The control changes its values according to the switching function which may be found using Pontrya-gin maximum principle. The discontinuity of the bang-bang control leads to disconti-nuity of a value function for the considered optimal control problem. Typical problems with bang-bang optimal control

include time-optimal control for linear and bilinear control systems.

Bank: A group of electrical devices, usually transformers or capacitors, connected in a way to increase capacity or to inter connect as threephase.

Banked: This term is used when two or more single phase transformers are connected or banked together to supply power to a three phase load. The three single phase transformers banked together will produce a KVA capacity of three times the nameplate rating of each of the single phase transformers. Example, three 5 KVA single phase transformers connected together for a three phase load will have a KVA capacity of 15 KVA.

Banyan switch: A multi stage switch with micro switches at each stage that routes the cells based on the output port.

Bar: Bar is called as a rod some length having hard material

Bar: A piece of material thicker than a sheet, long in proportion to its width or thickness and whose width-thickness ratio is much smaller than sheet or plate, as low as unity or squares and rounds. Bars are generally smaller in cross section than billets or other forms of forging stock.

Bar Code: It's a code which is print on a manufactured items which includes pries manufacturing date and weights. Its in the form of some bars and some niddle

Bar Code Generator: The bar ode generator is a program which generate the bar code for a manufacturing items which after used for selling and other purpose

Bar Code Reader: To scan the bar code a scanner is used which san the bar code and the details of the items is shown on your screen having the detail of items like pries date and weight

Bar Code Scanner: To scan the bar code a scanner is used which san the bar code and the details of the items is shown on your screen having the detail of items like pries date and weight

Bar Code System: Bar code system is combination of hardware and software used to build a bar code. It consist computer, bar code scanner or reader

Bar Coding: It's a code which is print on a manufactured items which includes pries manufacturing date and weights. Its in the form of some bars and some niddle

Bar Coil: A bar coil is constructed of a ferrite bar and is wrapped with copper wire. This device is used to reduce RFI generated by a dimmer or other electronic switching devices.

Bar Cutters: It is used to cut the bar (Road) in two or more pieces. It consists of one rotary blade and table for rode placement.

bar : Unit of pressure equivalent to 105 pa.

Bardeen, John : Bardeen, John (1908–1991) Born: Madison, Wisconsin, U.S.A. Bardeen is best known for his two Nobel Prizes. The first prize he received was in 1956 for his development at Bell Labs, along with Walter Brattain and William Shockley, of the first transistor. When the three applied for a patent for the device in 1948 they called it a germanium transfer resistance unit; hence the name transistor. This device was a sig-nificant step in the development of integrated circuits. Bardeen's second Nobel, which he shared with Leon Cooper and John R. Schri-effer, was for his work at the University of Illinois in describing the theory of supercon-ductivity.

Bare Conductor: A conductor not covered with insulating material.

Bare Spot: A location on the strip where coating did not adhere.

bare-hand : bare-hand refers to a method of servicing energized overhead conductors in which the line worker's body is maintained at the same potential as the conductor on which he is working, thus enabling the conductor to be contacted without danger of shock.

BARITT : BARITT barrier injection transit time, a microwave transit time device that uses injection over a forward biased barrier and transit time delay through a reverse biased junction to produce negative resistance at microwave frequencies, useful in low power and self-oscillating mixer applications.

Bark: Outer most part of tree. Or the shell of a tree is called bark

Barkhausen criterion : Barkhausen criterion two conditions placed on a feedback oscillator necessary for sustained oscillation. The Barkhausen criterion states The total loop amplitude transmission factor must be at least unity. The frequency of oscillation will be that frequency characterized by a total loop phase transmission factor of $N2\pi$ radians. N is either zero or an integer. Simply, for sustained oscillation, a disturbance that makes a complete trip around the feedback loop of the oscillator must be returned at least as strong as the original disturbance and in phase with that disturbance.

Barkhausen effect : Barkhausen effect the series of irregular changes in magnetization that occur when a magnetic material is subjected to a change in magnetizing force.

Barkhausen noise : Barkhausen noise noise arising in magnetic read heads because the interlocking magnetic domains cannot rotate freely in response to an applied field. The response to an external magnetic field is randomly discontinuous as domains "stick," and then release. Barkhausen noise is particularly important in very small heads and thin-film heads where very few domains are involved; in larger heads the effects of many domains tend to average out and Barkhausen noise is relatively less important.

Barometer: To check the atmospheric pressure a device is used called barometer

barometer: Instrument for measuring atmospheric pressure.

Barometric Pressure Transmitters: A Barometric Pressure Transmitter is used to determine pressure of a gas or liquid. There are many types of technologies employed for pressure sensing. Technologies that use a piezoresistor are most widespread in use. In a piezoresistive pressure transmitter, a thin layer of semiconductor exhibits differential resistivity due to the change in mechanical strain caused by pressure change. Other barometric pressure transmitters correlate changes in capacitance; or electromagnetic or piezoelectric properties.

Barrage jamming. : Simultaneous electronic jamming over a broad band of frequencies.

Barrel: A unit of volume equal to 42 U.S. gallons.

barrel distortion : barrel distortion a geometric distortion of a raster display in which vertical lines appear to bow outward away from the display center line. The bowing of the vertical lines increases as the distance from the vertical center increases. The appearance of these vertical lines is similar to the staves of a barrel. Barrel distortion is a result of the over-correction for pincushion distortion.

barrel shifter : barrel shifter an implementation of a shifter, which contains $\log_2(\text{max number of bits shifted})$ stages, where each stage shifts the input by a different power of two number of positions. It can be implemented as a combinational array with compact layout that can shift the data by more than one bit using only one gate. For instance, for a 4-bit word, it can execute instructions shl, shl2, shl3, and shl4. This shifter lends itself well to being pipelined.

Barrels per calendar day: The amount of input that a distillation facility can process under usual operating conditions. The amount is expressed in terms of capacity during a 24-hour period and reduces the maximum processing capability of all units at the facility under continuous operation (see Barrels per Stream Day) to account for the following limitations that may delay, interrupt, or slow down production. 1. the capability of downstream processing units to absorb the output of crude oil processing facilities of a given refinery. No reduction is necessary for intermediate streams that are distributed to other than downstream facilities as part of a refinery's normal operation; 2. the types and grades of inputs to be processed; 3. the types and grades of products expected to be manufactured; 4. the environmental constraints associated with refinery operations; 5. the reduction of capacity for scheduled downtime due to such conditions as routine inspection, maintenance, repairs, and turnaround; and 6. the reduction of capacity for unscheduled downtime due to such conditions as mechanical problems, repairs, and slowdowns.

Barrels per stream day: The maximum number of barrels of input that a distillation facility can process within a 24-hour period when running at full capacity under optimal crude and product slate conditions with no allowance for downtime.

Barricade: A physical obstruction such as tapes, cones, or A-frame type wood or metal structures intended to provide a warning about and to limit access to a hazardous area.

Barrier: A physical obstruction which is intended to prevent contact with energized lines or equipment or to prevent unauthorized access to a work area.

Barrier energy: The energy given up by an electron in penetrating the cell barrier; a measure of the electrostatic potential of the barrier.

barrier layer : barrier layer layer of deposited glass adjacent to the inner tube surface to create a barrier against OH diffusion.

barrier voltage : barrier voltage a voltage that develops across the junction due to uncovered immo-bile ions on both sides of the junction. Ions are uncovered due to the diffusion of carriers across the junction.

barrier : A part providing a defined degree of protection against contact with live parts from any usual direction of access.

Barrier, fire: A continuous membrane, either vertical or horizontal, such as a wall or floor assembly, that is designed and constructed with specified fire resistance rating to limit the spread of fire and that will also restrict the movement of smoke. Such barriers can have protected openings.

baryon : baryon a collective term for all strongly interacting particles with masses greater than or equal to the mass of the proton. These include the proton, neutron, and hyperons.

base: The part of a transistor which separates the emitter from the collector. The middle part of the transistor. permits electrons from emitter to pass through to the collector.

base: The reference quantity in a per-unit or percentage calculation.

base address : base address (1) an address to which an index or displacement is added to locate the desired information. The base address may be the start of an array or data structure, the start of a data buffer, the start of page in memory, etc.as a simpler alternative to a full virtual memory, the code space or data space of a program can be assumed to start at a convenient starting address (usually 0) and relo-cated in its entirety into a continuous range of physical memory addresses. Translation of the addresses is performed by adding the contents

of an appropriate base address register to the user address.

Base band: Referring to a technology in which a signal is transmitted directly onto a channel without modulating a carrier.

Base bill: A charge calculated by taking the rate from the appropriate electric rate schedule and applying it to the level of consumption.

Base Box: Unit of area of 112 sheets of tin mil products (tin plate, tin free steel or black plate) 14 by 20 inches, or 31,360 square inches. Tin Plate is sold, and carried in finished inventory, on a weight per unit area rather than on a thickness basis.

Base crl. : A crl that is used as the foundation in the generation of dcrl baseband modem.

base dynamic parameters : base dynamic parameters a set of dynamic parameters that appear in the canonical equations of motion. Canonical equations of motion of robot dynamics do not include linearly dependent equations. These are eliminated by making use of various procedures. As a result, dynamic equations of motion contain only independent equations which are used for the purpose of control. Each base dynamic parameter is a linear combination of the inertial parameters of the individual links. Base dynamic parameters are subject to the identification in adaptive control schemes applied to robot control.

base frame : base frame a frame attached to the non-moving base of the manipulator.

Sometimes the base frame is called the reference frame.

Base gas: The quantity of natural gas needed to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas usually is not withdrawn and remains in the reservoir. All natural gas native to a depleted reservoir is included in the base gas volume.

Base header: In IPv6, the main header of the datagram.

Base load: The minimum amount of electric power delivered or required over a given period of time at a steady rate.

Base load: That part of electricity demand which is continuous, and does not vary over a 24-hour period. Approximately equivalent to the minimum daily load.

Base load capacity: The generating equipment normally operated to serve loads on an around-the-clock basis.

base load capacity : Capacity of generating equipment operated to serve loads 24-hours per day.

Base load plant: A plant, usually housing high-efficiency steam-electric units, which is normally operated to take all or part of the minimum load of a system, and which consequently produces electricity at an essentially constant rate and runs continuously. These units are operated to maximize system mechanical and thermal efficiency and minimize system operating costs.

base load plant: A power plant built to operate around-the-clock. Such plants tend to have low operating costs and high capital costs and are best utilized by running continuously. Coal fired and nuclear fuelled plants are typical base load plants.

base load : The minimum load experienced by an electric utility system over a given period of time, which must be supplied at all times.

Base Metal: An inexpensive metal which is commonly available as a resource called as base metal

Base Metal Contamination: (1) The metal present in the largest proportion in an alloy; (2)

the metal to be brazed, cut or welded; (3) after welding the part of the metal that was not melted during the process.

Base period: The period of time for which data used as the base of an index number, or other ratio, have been collected. This period is frequently one of a year but it may be as short as one day or as long as the average of a group of years. The length of the base period is governed by the nature of the material under review, the purpose for which the index number (or ratio) is being compiled, and the desire to use a period as free as possible from abnormal influences in order to avoid bias.

Base Plate: A plate to which the pattern assemblies are attached and to which a flask is subsequently attached to form the mold container.

Base power: Power generated by a utility unit that operates at a very high capacity factor.

Base rate: A fixed kilowatt-hour charge for electricity consumed that is independent of other charges and/or adjustments.

base register: base register the register that contains the component of a calculated address that exists in a register before the calculation is performed (the register value in "register C-immediate" addressing mode, for example).

base register addressing : base register addressing addressing using the base register. Base register is the same as base address register, i.e., a general-purpose register that the programmer chooses to contain a base address.

base speed : base speed corresponds to speed at rated torque, rated current, and rated voltage conditions at the temperature rise specified in the rating. It is the maximum speed at which a motor can operate under constant torque characteristics or the minimum speed to operate at rated power.

Base Speed of an Adjustable-Speed Motor: The speed of a motor obtained with full field under full load with no resistor in the armature circuit.

Base Station: it is the interface between traditional wired phones and wireless phones. It provides the connection between wireless and wired phones.

base station : base station the fixed transceiver in a mobile communication system.

Base Type: Highly strength, solid flat piece of metal which is used as a base for some part is called as base plate

base vector: base vector a unit vector in a coordinate direction.

base vector : base the number of digits in a number system (10 for decimal, 2 for binary).one of the three terminals of a bipolar transistor.a register's value that is added to an immediate value or to the value in an index register in order to form the effective address for an instruction such as LOAD or STORE.

Baseband: With reference to LAN, the system whereby digitally encoded information is directly connected to the transmission medium without being modulated. Compare with broadband.

baseband : baseband in communication systems, the information-carrying signal that is modulated onto a carrier for transmission.

baseband signal : baseband signal in digital communications, a signal that appears in the transmitter prior to passband modulation.

Baseband, baseband transmission. : Direct transmission method used for short distances (less than 10 miles); uses a bandwidth whose lowest frequency is zero (dc level) - that is,

transmission of raw (carrier-less) binary data. The transmission medium carries only one signal at a time.

Baseband. : The band of frequencies occupied by the signal before it modulates the carrier (or subcarrier) frequency to form the transmitted line or radio signal

Baseboard heater: As a type of heating equipment, a system in which either electric resistance coils or finned tubes carrying steam or hot water are mounted behind shallow panels along baseboards. Baseboards rely on passive convection to distribute heated air in the space. Electric baseboards are an example of an "Individual Space Heater."

Baseline: It is the base measurement line of construction. This line is taken for reference for all measurement. It may be imaginary most of times.

baseline forecast : A prediction of future energy needs which does not take into account the likely effects of new conservation programs that have not yet been started.

Baseline performance value: Initial values of short-circuit current, open-circuit voltage, and current at maximum power measured by the accredited laboratory and corrected to Standard Test Conditions, used to validate the manufacturer's performance measurements provided with the qualification modules per IEEE 1262.

Basic encoding rule (BER): A standard that encodes data to be transferred through a network.

Basic Geometric Commands : Common auto cad command for making some geometrical shapes like line, circle, arc, rectangle etc.

Basic grade messaging. : The basic grade service is the electronic mechanism for exchanging routine information between persons throughout defence and its partners, in a manner optimised to deliver a basic capability in the cheapest way consistent with basic requirements for security. (cceb/nato)

basic impulse insulation level (BIL) : basic impulse insulation level (BIL) a measurement of the impulse withstand capability of a piece of electric power equipment based on its ability to withstand 50% of im-pulses applied at the BIL voltage.

Basic impulse level (BIL): A reference impulse (voltage) insulation strength expressed in terms of the peak value of the withstand voltage of a standard impulse voltage wave. It is used to express the ability of electrical equipment such as transformers to withstand certain levels

Basic impulse level (BIL): The ability of electronic equipments to withstand lightning strikes . It protect transformer winding from traveling wave

basic input–output system (BIOS) : basic input–output system (BIOS) part of a low-level operating system that directly controls input and output devices.

basic insulation: Insulation applied to live parts to provide basic protection against electric shock and other hazards, which do not necessarily include insulation used exclusively for functional purposes.

Basic Insulation Level: A design voltage level for electrical apparatus that refers to a short duration (1.2 x 50 microsecond) crest voltage and is used to measure the ability of an insulation system to withstand high surge voltage.

Basic Insulation Level: it may be defined as the minimum voltage ratings of electrical equipments.

basic insulation level BIL: It defines the insulation level of power system equipment. It is a statement of the impulse (lightning or switching as appropriate) withstand voltage and the short duration power frequency withstand voltage.

basic lightning impulse level (BIL) : basic lightning impulse level (BIL) the strength of insulation in terms of the with-stand voltage crest value using a standard voltage level impulse.

Basic Oxygen Furnace (BOF): The oxygen furnace is used to make steel from rich carbon molten pig iron.

Basic Oxygen Process: It is a steelmaking process. In this steel is made from rich carbon molten pig iron.

Basic rate interface (BRI): In ISDN an electrical interface providing two B channels (64Kbps) and one D channel (16 Kbps). The total data rate is 192 Kbps which includes some overhead.

Basic Steel: Steel melted in a furnace with a basic bottom and lining and under a slag containing an excess of a basic substance such as magnesia or lime.

basin of attraction : basin of attraction the region in state space from which a dynamical system moves asymptotically toward a particular attractor.

basis function : basis function one of a set of functions used in the transformation or representation of some function of interest. A linear transformation T of continuous functions is of the form $f(x) = \sum_{i=1}^n c_i \phi_i(x)$ for photorefractive and optical multibeam coupling.

Basket Screen: A first stage in line water filter for water delivered from the New Blowing Room Pump Room to the Blast Furnace. The strainer contains an electric driven rotary sieve that catches particulates and prevents them from entering the water system.

Bass Boost: Boost of bass response of amplifier for good sound quality.

Bastard: Threads, parts, tools and sizes that are not standard, such as, Bastard Nuts Bastard Plus bastard fittings and so forth. The term also refers to a standard coarse cut file.

Batch: Amount or quantity of core or mold sand or other material prepared at one time.

Batch Anneal: The process by which a large, stationary stack of steel coils (4 coils high) is subjected to a long heat treating cycle. This process enables the cold rolled sheet to fully recrystallize into the softest possible product conforming to customer specifications.

Controlling the recrystallization process makes a fine grained microstructure easy to obtain, and minimizes the tendencies for retention of directional properties of the rolled steel which could produce undesirable shapes in the stamping of a cylindrical part such as a can. Also see Anneal and Continuous Anneal.

Batch Oven: This is also a type of furnace. Where various thermal processes are processing like aging, drying, curing.

Batch processing. : A data processing technique in which input data is accumulated and prepared off-line and processed in batches.

Batch Weighing: Batch Weighing is an industrial process that is used to distribute bulk loose material into discrete amounts for packaging. It typically consists of a computer controlled bin and hopper system which carefully meters feedrates and a scale for accurately determining weight.

Batcher-banyan switch: An enhanced banyan switch in which a switch sorts the cells according to destination.

Batching Plants: A batching plant is an installation of equipment for mixing bulk components. It typically refers to a remote installation set up for the purpose of mixing concrete on site.

Bath: Molten metal on the hearth of a furnace, in a crucible, or in a ladle.

Bath Annealing: Is immersion in a liquid bath (such as molten lead or fused salts) held at an assigned temperature when a lead bath is used, the process is known as lead annealing.

Batteries: These are used in the substation control house as a backup to power the control systems in case of a power blackout.

Battery: A direct-current power source consisting of two or more cells.

Battery: A container with a base and walls for holding several cells or batteries.

battery: A number of primary or secondary cells arranged in series or parallel. A device for turning chemical energy into electrical energy.

Battery: An electric battery is an Electrochemical device for producing electricity by converting chemical energy or a device consisting of two or more electrochemical cells that convert stored chemical energy into electrical energy. Each cell of battery contains one positive terminal and one negative terminal.

Battery: Device that changes chemical energy into electrical energy.

battery : battery one or more cells connected so as to produce energy.

battery backup: A battery or a set of batteries in a UPS system. Its purpose is to provide an alternate source of power if the main source is interrupted.

Battery Backup: Backup of a battery can be defined as the supply of power per hour. Or supply of constant current output for number of hours.

battery charger: A device or a system which provides the electrical power needed to keep the battery backup fully charged.

Battery energy storage: The three main applications for battery energy storage systems include spinning reserve at generating stations, load leveling at substations, and peak shaving on the customer side of the meter. Battery storage has also been suggested for holding down air emissions at the power plant by shifting the time of day of the emission or shifting the location of emissions.

Battery Fuel Gauge: The gauge which indicates or give readings of amount of battery charging or discharging condition.

Battery Monitor: battery power monitoring system which measure the precise voltage and current.

Battery Tray: A combination of two or more chemical cells connected together electronically to produce electrical energy.

Battery. : An apparatus which may comprise a group of two or more cells used for the conversion of chemical energy into electrical energy.

Baud: Strictly speaking, the number of signal-level transitions per second in digital data. For some common coding schemes, this equals bits per second, but this is not true for more complex coding where it is often misused. Telecommunication specialists prefer bits per second, which is less ambiguous.

baud : baud the signaling rate, or rate of state transitions, on a communications medium. One baud corresponds to one transition per second. It is often confused with the data transmission rate, measured in bits per second.

Baud (1). : Unit of signalling speed. The speed in baud's is the number of discrete conditions or signal events per second. If each signal event represents only one bit, the baud rate is the same as bps; if each signal even represents more than one bit (such as in a bidit), the baud rate

is smaller than bps.

baud (2). : The unit of modulation rate or the unit of transfer rate of signal elements of constant duration in a discretely-timed or digital signal; the number of baud's is equal to the reciprocal of the duration in seconds of the shortest signal element or of the unit interval in such signal.

Baud rate: The number of signal elements transmitted per second. A signal element consists of one or more than one bits.

Baud Rate : Serial communications data transmission rate expressed in its per second (bps).

Baudot code. : A code (named after emile baudot, a pioneer in printing telegraphy) for asynchronous transmission of data in which 5 bits represent a single character. Use of letters shift and figures shift enables 64 alphanumeric characters to be represented. Used mainly in teleprinter systems which add one start bit and 1.5 stop bits. Contrast with ascii and ebclic.

Bauxite: The only commercial ore of aluminum, corresponding essentially to the formula $Al_2O_3 \cdot xH_2O$.

Bayes envelope function : Bayes envelope function given a the prior distribution of a parameter θ and a deci-sion function , the Bayes envelope function

Bayes risk function : Bayes risk function with respect to a prior distribution of a parameter θ and a decision rule , the expected value of the loss function with respect to the prior distribution of the parameter and the observation X .

Bayesian detector : Bayesian detector a detector that min-imizes the average of the false-alarm and miss probabilities, weighted with respect to prior probabilities of signal-absent and signal-present conditions.

Bayesian estimator : Bayesian estimator an estimator of a given parameter θ , where it is assumed that θ has a known distribution function and a related random variable X that is called the observation. X and θ are related by a con-ditional distribution function of X given θ . With $P(X|\theta)$ and $P(\theta)$ known, an estimate of θ is made based on an observation of X .

Bayesian reconstruction : Bayesian reconstruction an algorithm in which an image u is to be reconstructed from a noise-corrupted and blurred version v .

Bayonet: A lampholder for low-voltage incandescent lamps having an unthreaded metal shell with two diametrically opposite keyways that cooperate with similarly located projections on a mating lamp bulb. Pushing down on the bulb and turning it clockwise in the socket locks the bulb in place.

Bay-O-Net: A fusing device frequently used to protect transformers and downstream devices. A BayONet fuse may include a Partial Range Current Limiting Fuse in series with n under oil fuse link.

Bayonet Coupling: A quick coupling device for plug and receptacle connectors, accomplished by rotation of a cam operating device designed to bring the connector halves together.

Bazooka: Performs functions of Galvanneal Furnace; set of torches on wheels used to shoot flames onto a strip to further heat it.

bb1: The abbreviation for barrel(s).

bb1/d: The abbreviation for barrel(s) per day.

bb1/sd: The abbreviation for barrel(s) per stream day.

Bcc, block check character. : A character added to the end of a transmission block for the

purpose of error detection - such as a crc or lrc.

BCD Binary coded decimal: . A digital code based on 0 and 1.

Bcd, binary-coded decimal. : A digital system that uses binary codes to represent decimal digits.

bcf: The abbreviation for billion cubic feet.

BCH code : BCH code cyclic block forward error control codes developed by Bose and Chaudhuri, and independently by Hocquenghem. These codes are a superset of the Hamming codes, and allow for correction of multiple errors.

BDC: Plastic busdrop cable

Beacon: In wireless networking, a beacon is a packet sent by a connected device to inform other devices of its presence and readiness.

Beacon: Beacon is device or system which is designed to get the attention of user for any specific location or product.

Beacon, fan marker. : A type of radio beacon the emissions of which radiate in a vertical fan shaped pattern. The signal can be keyed for identification purposes.

Beacon, homing. : See beacon, radio.

Beacon, rada. : A radio navigation transponder which transmits in response to a specific received signal a, pulsed radio signal with specific characteristics whereby the bearing and/or range of the transponder from the interrogator may be determined, and which in some cases also be used to identify the transponder.

Beacon, radio range. : See station, radio range (rlr).

Beacon, radio. : A radio transmitter which emits a distinctive or characteristic signal used for the determination of bearings, courses or location.

Beacon, radio-marker. : See station, aeronautical marker beacon (rla).

Beacon. : A light or electronic source which emits a distinctive or characteristic signal used for the determination of bearings, courses or location.

Beacon. : A discrete rf signal produced and radiated by a satellite for earth station antenna tracking purposes, usually modulated by an identification frequency

Beading: Raising a ridge on sheet metal.

beam : beam (1) transverse spatial localization of the power in a wave field.(2) a slender unidirectional stream of particles or radiation.

Beam (radio).: A radio transmission concentrated into a sector narrow in either azimuth or elevation, or in both.

Beam And Sling: Tackle used in conjunction with a crane for turning over the cope or drag of a mold prior to assembly.

Beam approach beacon system (babs). : A secondary radar system of radio navigation which provides to an aircraft, during its approach, lateral guidance and distance from the optimum point of landing.

beam cooling : beam cooling the process by which a particle beam's phase space volume is reduced, while conserving Liouville's theorem (empty spaces between particles exist). Beam cooling is manifest by a reduction in the transverse beam size (betatron cooling) or by a smaller momentum spread (momentum cooling).

beam divergence : beam divergence the geometric spreading of a radiated electromagnetic beam as it travels through space.

beam hardening : beam hardening a phenomenon that occurs when a polychromatic X-ray beam passes through a material. Lower energy photons are absorbed more readily than higher energy photons, increasing the effective energy of the beam as it propagates through the material.

beam intensity : beam intensity the average number of particles in a beam passing a given point during a certain time interval. For example the number of protons (electrons) per pulse or protons per second.

beam loading : beam loading the beam being accelerated by an RF cavity and it changes the gradient and phase of the RF in the cavity.

beam lobe switching. : A method of determining the direction of a target by successive comparison of the signals corresponding to two or more beam directions differing slightly from the direction of the target. The motion of the beam may be either:

Beam Lumens: The lumens contained within the beam spread of a floodlight.

beam mode : beam mode confined electromagnetic field distributions of a propagating wave that match the boundary conditions imposed by a laser or aperture. For example, Hermite–Gaussian or Laguerre–Gaussian.

beam parameter : beam parameter one of several complex numbers employed to characterize the propagation of a beam; most common parameter combines in its real and imaginary parts the phase front curvature and spot size of a Gaussian beam.

beam pulsing : beam pulsing a method used to control the power output of a klystron in order to improve the operating efficiency of the device.

Beam rider. : A missile guided by a radar or radio beam.

beam roll : beam roll a periodic change in horizontal and/or vertical positions during spill. This does not include changes caused by humans.

beam solid angle : beam solid angle a parameter that qualitatively describes the angular distribution of radiated power from an antenna. The values range from very small numbers for very focused antennas to 4 steradians for an isotropic radiator.

Beam Spread: With regard to outdoor light, the angle between the two directions in a plane in which the intensity is equal to a stated percentage of the maximum beam intensity. The percentage is typically 10% for floodlights and 50% for roadway luminaries.

Beam Spread: The measure of the whole angle from side to side of the main lobe of sound beam in the far field.

Beam Spread: In any plane, the angle between the two directions in which the candlepower is equal to a stated percent (usually 10 percent) of the maximum candlepower in the beam.

beam stop : beam stop a thick metal shield that moves into the beam line to prevent beam from entering a specific area.

beam toroid : beam toroid a device used for measuring beam intensities by measuring the magnetic field fluctuations produced by the passing beam. The magnetic field fluctuations produce a current in a coil, that is wound around a closed circular ring (torus) through which the beam passes.

beam waist : beam waist position at which a beam is most highly confined; for Gaussian beams in real media the position at which the phase fronts are flat.

Beam width. : The angle between the directions, on either side of the axis, at which the intensity of the radio frequency field drops to one half the value it has on the axis.

beamformers : beamformers system commonly used for detecting and isolating signals that are propagating in a particular direction.

beamforming : beamforming a form of filtering in spatial rather than time domain to obtain a desired spatial impulse response in order to suppress or to reject signal components coming from certain directions. The technique involves directing one or more beams in certain directions by adjusting, for example, the element excitation of an array antenna. Used in communications applications to suppress other signals than the desired source signal. Also termed spatial filtering.

beamline : beamline a series of magnets placed around a vacuum pipe that carry the proton beam from one portion of the accelerator to another. Also known as transport line.

beamsplitter : beamsplitter any of a number of passive optical devices that divide an optical wave-front into two parts. Wavefront division may be according to intensity, polarization, wave-length, spatial position, or other optical properties.

beamwidth : beamwidth the angular width of the major lobe of a radiation pattern. It is usually at the half-power level, i.e., 3 dB below the peak of the major lobe. It can also be specified as the width between the nulls on either side of the major lobe (BWFN).

Bearer channel: In ISDN channel type with the 64 Kpbs data rate; the basic user channel.

Bearer services: In ISDN, a service that does not manipulate the content of the transmission.

Bearing Bush: Bearing Bushes support a cylindrical shaft in a housing. They permit axial rotation while constraining lateral motion. The simplest bearing bushing is a cylindrical sleeve. The inner surface of the bearing bushing is in sliding contact relative to the outer surface of the shaft. Bearing bushings can incorporate low friction materials and coatings, as well as lubrication, to reduce friction, improve efficiency and extend service life.

Bearing class 'a' : A bearing which a direction finding operator may reasonably consider to be accurate to within plus or minus two degrees.

Bearing class 'b' : A bearing which a direction finding operator may reasonably consider to be accurate to within plus or minus five degrees.

Bearing class 'c' : A bearing which a direction finding operator may reasonably consider to be accurate to within plus or minus ten degrees.

bearing currents: bearing currents bearings of electrical machines, because of electromagnetic unbalance in the machine or from using high dvdt inverters. The latter is able to charge up the stray capacitance present between the stator and rotor and between the rotor and shaft and thus allows motor bearing currents to flow, with resulting bearing damage.

Bearing Guides: A bearing guide is a mechanical device used to provide a smooth, controlled surface to guide the movement of another component such as a tool bit. The guide is often a set of concentric cylindrical shells with ball or roller element bearings between the two surfaces. An example of a bearing guide is the small guide often used with router bits in woodworking.

Bearing Housings: A Bearing Housing is a structural component designed to support a bearing. Bearing housings typically feature a recess designed for a close tolerance or press fit of the bearing. A common type of bearing housing is referred to as a pillow block. This is used to mount a bearing offset to a structural support, such as a beam.

Bearing Load: A compressive load supported by a member, usually a tube or collar, along a

line where contact is made with a pin, rivet, axle, or shaft.

Bearing Plate: Steel plate placed under one end of a beam or truss for load distribution.

Bearing Slide: Bearing slides are mechanical devices used to enable and restrict the linear translation of an object. The slide mechanism uses bearings, typically ball bearings or roller element bearings, to allow a smooth, low friction translation. A common example of bearing slides are the sliding mechanisms used on cabinet drawers.

Bearing Strength: The maximum bearing load at failure divided by the effective bearing area. In a pinned or riveted joint, the effective area is calculated as the product of the diameter of the hole and the thickness of the bearing member.

Bearing Wall: Wall supporting a load other than its own weight.

beat frequencies : beat frequencies the two frequencies, sum and difference frequencies, generated during the heterodyning process or during the amplitude-modulating process. For example, if a 500 kHz carrier signal is amplitude-modulated with a 1 kHz frequency, the beat frequencies are 499 kHz and 501 kHz.

beat frequency oscillator : beat frequency oscillator oscillator used in superheterodyne receivers generating a frequency when combined with the final IF produces a difference or beat frequency in audio range.

beckmann thermometer: Sensitive thermometer for measuring small differences or changes in temperature.

Becquerel: The SI unit of intrinsic radioactivity in a material. One Bq measures one disintegration per second and is thus the activity of a quantity of radioactive material which averages one decay per second. (In practice, GBq or TBq are the common units.)

Bed: One of the principal parts of a machine tool having accurately machined ways or bearing surfaces for supporting and aligning other parts of the machine. Stationary platen of a press to which the lower die assembly is attached.

Bed In: Method whereby drag may be rammed in the pit or flask without necessity of rolling over. Process used in production of heavy castings.

bed of nails : bed of nails a test fixture for automated circuit qualification in which a printed wiring board is placed in contact with a fixture that contacts the board at certain nodes required for exercising the assembly.

Bedding: Sinking a pattern down into the sand to the desired position and ramming the sand around it.

Bedding A Core: Resting an irregularly shaped core on a bed of sand for drying.

bel: Ten decibels. (see decibel)

Bel. : Equal to 10 decibels.

Bell 103. : An at&t, 0-300 bps modem providing asynchronous transmission with originate or answer capability; also often used to describe any bell 103-compatible modem.

Bell 113. : An at&t, 0-300 bps modem providing asynchronous transmission with originate or answer capability (but not both); also often used to describe any bell 113-compatible modem.

Bell 201. : An at&t, 2400 bps modem providing synchronous transmission; bell 201 b was designed for leased line applications (the original bell 201 b was designed for public telephone network applications); bell 201 c was designed for public telephone network applications; also often used to describe any bell 201-compatible modem.

Bell 202. : An at&t, 1800 bps modem providing asynchronous transmission that required

4-wire circuit for full-duplex operation; also an at&t 1200 bps modem providing asynchronous transmission over 2-wire, full duplex, leased line or public telephone network applications; often used to describe any bell 202-compatible modem.

Bell 208. : An at&t, 4800 bps modem providing synchronous transmission; bell 208 a was designed for leased line applications; bell 208 b was designed for public telephone network applications; also often used to describe any bell 208-compatible modem.

Bell 209. : An at&t, 9600 bps modem providing synchronous transmission over 4-wire leased lines; also often used to describe any bell 209-compatible modem.

bell 212, bell 212a. : An at&t, 1200 bps full-duplex modem providing asynchronous transmission or asynchronous transmission for use on the public telephone network; also often used to describe any bell 212-compatible modem.

Bell 43401. : Bell publication which defines requirements for transmission over telcosupplied circuits that have dc continuity (that are metallic). See also local dataset.

Bell core: Bell Communication Research.

bell insulator : bell insulator a type of strain insulator, shaped like saucer with ribs on its lower side and frequently used in insulator strings.

Bell modems: Modems produced by the Bell Telephone Company.

Bell Mouth: The flaring or tapering of a machined hole, usually made at the entrance end because of misalignment or spring of the cutting tool.

Bellman -Ford algorithm: An algorithm used to calculate routing tables in the distance vector routing method.

Bello functions : Bello functions a group of alternative methods of characterizing a wideband communication channel, named after their pro-poser, P. Bello. The four functions characterizing deterministic channels are the Input Delay-spread Function, the Output Doppler-spread function, the Time-variant Transfer Function and the Delay Doppler-spread function.

Bellows: Type of pressure switch actuator with a fixed effective area for a constant differential over the entire range of the pressure switch.

Belly Roll: Roll used on the line to steady plate.

Belt: Refers to a lineman's climbing belt.

Belt: belt may be any close or open loop which is used to hold something .

Belt Conveyors: A belt conveyor is a common way to transport material in a factory or industrial environment. A wide belt is stretched between two or more pulleys and serves as the conveying surface. Rotational movement of the pulleys creates linear belt movement. The powered pulley is called the drive pulley, while the unpowered pulleys are known as idlers.

Belt Driven Actuation: Belt driven actuation describes the use of a linear actuator driven by a belt. The use of belt allows for equal force applied in both the push and pull directions. The belt is driven by servo or stepper motors to enable small, precise movement of the belt and actuator.

Belt Scrapers: A belt scraper is a component used in conveyor belt systems to clean or remove material from the conveyor belt. Belt scraper blades are often rubber in order to avoid damaging the belt and replaced when they are no longer scraping the belt properly.

Belt Tensioning Winches: A Belt Tensioning Winch is used to maintain proper tension on a conveyor system in response to variable loading. They adjust belt tension by repositioning an idler pulley relative to the drive pulley using a winching system.

Belt Wrapper: Line equipment used in the Tin Mill for starting coils on prime or reject reels. The belt wrapper ensures a proper start.

Bench Blower: A small core blowing machine, utilizing a removable sand magazine and blow heat.

Bench Grinder: A small grinding machine for shaping and sharpening the cutting edges of tools.

Bench Mark: Point of reference from which measurements are made.

Bench Rammer: A short rammer used by bench molders.

Bench sample: a face or channel sample taken of just that contiguous portion of a coalbed that is considered practical to mine, also known as a "bench;" For example, bench samples may be taken of minable coal where impure coal that makes up part of the geologic coalbed is likely to be left in the mine, or where thick partings split the coal into two or more distinct minable seams, or where extremely thick coalbeds cannot be recovered by normal mining equipment, so that the coal is mined in multiple passes, or benches, usually defined along natural bedding planes.

Bench Work: Work done primarily at a bench with hand tools. Occasionally supplemented by small power driven tools.

benchmark : benchmark standard tests that are used to compare the performance of computers, processors, circuits, or algorithms.

Bend Radius: The inside radius of a bent section,

Bend Radius: The minimum radius to which a cable or fiber can be bent before excessive signal attenuation occurs.

Bend Test: Various tests which is used to ascertain the toughness and ductility of a metal product, in which the material is bent around its axis and/ or around an outside radius. A complete test might specify such a bend to be both with and against the direction of grain. For testing, samples should be edge filed to remove burrs and any edgewise cracks resulting from slitting or shearing. If a vice is to be employed, then you must line the jaws with some soft metal, to permit a flow of the metal in the piece being tested.

Bending Angle: A 'V shaped' piece of angle iron attached to the rear of the coil car in the Strip Steel, which is used to help the operator put bends into the front end of a coil.

Bending Equipment: Manual, motorized, hydraulic or heat-driven to bend all varieties and diameters of raceway at suitable angles.

bending loss : bending loss in a fiber depends exponentially on the bend radius R. It is proportional to $\exp(-R/R_c)$ where the critical radius

Bending Strength: Upper limit of normal stress of a beam at which fracture or excessive plastic deformation occurs.

Bent Axis Pumps: In this pump, the pistons are at an angle to the drive shaft and Thrust Plate. The piston block shaft is connected to the drive shaft by a universal joint, not shown. The drive shaft, thrust plate, piston block shaft, and piston block all revolve.

Bentonite: A colloidal clay derived from volcanic ash and employed as a binder in connection with synthetic sands, or added to ordinary natural (clay bonded) sands where extra strength is required.

Benzene: 66An aromatic hydrocarbon present in small proportion in some crude oils and made commercially from petroleum by the catalytic reforming of naphthenes in petroleum

naphtha. Also made from coal in the manufacture of coke. Used as a solvent in the manufacture of detergents, synthetic fibers, petrochemicals, and as a component of high-octane gasoline.

Bernoulli : Bernoulli discrete-time random process defined on an index set corresponding to fixed increments in time. A typical example is a sequence of coin tosses where the values of the process are denoted as “Heads” or “Tails” depending on the outcome of the tosses. The output values of the process is a sequence of statistically independent random variables with the same probability distribution. The two outcomes may or may not have equal probabilities.

Berry, Clifford Edward : Berry, Clifford Edward known as the co-developer, along with John Vincent Atanasoff, of the first functioning electronic digital computer. Berry was recommended to Atanasoff by the Dean of Engineering at Iowa State College as a most promising student who understood the electronics well enough to help Atanasoff implement his ideas for a computing machine. Unfortunately, Berry's contributions as a computing pioneer were not honored until after his death.

Beryllium Copper: An alloy of copper and 2-3% beryllium with optionally fractional percentages of nickel or cobalt. Alloys of this series show remarkable age hardening properties and an ultimate hardness of about 400 Brinell (Rockwell C43). Because of such hardness and good electrical conductivity, beryllium copper is used in electrical switches, springs, etc.

Beryllium Copper (BeCu): A relatively expensive contact material with properties superior to brass and phosphor bronze. It is recommended for contact applications requiring repeated extraction and reinsertion because of its resistance to fatigue at high operating temperatures.

beryllium oxide : beryllium oxide a compound commonly used in the production of ceramics for electrical applications and whose dust or fumes are toxic.

Bessel beam : Bessel beam transverse wave amplitude distribution in which the radial variation is approximately describable in terms of truncated Bessel functions; collimation for Bessel beams is sometimes considered better than for more usual polynomial-Gaussian beams.

Bessel functions : Bessel functions a collection of functions, denoted as $J_n(x)$ and $Y_n(x)$, that satisfy Bessel's equation where f is equal to either J or Y ; n is the order of the function and x is its argument. Typically, Bessel functions arise in boundary value problems that are based upon a cylindrical coordinate system.

Bessemer Process: A process for making steel by blowing air through molten pig iron contained in a refractory lined vessel so that the impurities are thus removed by oxidation.

Best Fit Straight Line (BSFL): The best straight line chosen such that the transducer response curve contains points of equal maximum deviations.

best-fit memory allocation : best-fit memory allocation a memory allocator for variable-size segments must search a table of available free spaces to find memory space for a segment. In “best-fit” allocation, the free spaces are linked in increasing size and the search stops at the smallest space of sufficient size. Compare with buddy memory allocation.

beta function : beta function a measure of beam width. The beta function details how the beam changes around the accelerator. There are separate beta functions for the x and y planes. The square root of β_x is proportional to the beam's x -axis extent in phase space.

Beta particle: A particle emitted from an atom during radioactive decay. Beta particles may

be either electrons (with negative charge) or positrons.

beta particle : beta particle an electron or positron emitted from a radioactive source.

Beta Ratio: The amount, expressed as a ratio, of particles in a fluid stream upstream of a filter, after the fluid passes through a filter, divided by the amount of particles downstream, for a particular size particle.

betatron oscillation : betatron oscillation about the equilibrium orbit in the horizontal and vertical planes. First studied in betatron oscillators, betatron oscillation is the transverse oscillation of particles in a circular accelerator about the equilibrium orbit. The restoring force for the oscillation is provided by focusing components in the magnetic field that act to bend a particle that is off the equilibrium orbit back toward it.

Bevel Gear Unit: A Bevel Gear Unit transfers input shaft rotation to an output shaft oriented at an angle to the input, typically 90 degrees. Power transfer is accomplished by bevel gears inside a gear box.

Bevel Geared Motors: A Beveled Geared Motor refers to an electric motor where the output shaft is oriented 90 degrees to the motor shaft. This is accomplished with the use of bevel gears for power transfer. They are used in applications where space limitations prevent the use of an inline motor shaft.

Bevel Helical Gearbox: Bevel helical gearboxes are most often found in the power transmission industry. In this gearbox, the face of the gear on which the teeth sit is conical and the two axes of rotation intersect. The gear teeth are also not aligned with the axis of rotation, tracing a helical path. As a result of these two characteristics, the bevel helical gearbox allows the gears to mesh even when the shafts are not aligned. The shaft angle at which the gears can operate depends on the bevel and gear tooth angles.

Bevel Helical Gearmotors: A Bevel Helical Gearmotor is an integrated motor and gearbox that can output rotation at an angle to the rotation of the motor shaft. Power is transmitted via a set of helical bevel gears, which makes these motors quieter in operation than a similar motor with straight bevel gearing.

Beverage antenna : Beverage antenna simple traveling wave antenna consisting of an electrically long horizontal wire above ground with a termination resistance between the end of the wire and ground equal to the characteristic impedance of the wire/ground transmission line.

bewley lattice diagram: This is a convenient diagram devised by Bewley, which shows at a glance the position and direction of motion of every incident, reflected, and transmitted surge on the system at every instant of time. The diagram overcomes the difficulty of otherwise keeping track of the multiplicity of successive reflections at the various junctions.

BHN: Brinell Hardness Number

bhp, BHP: [see brake horse power].

Bi: Chemical symbol for Bismuth

Bi Coil: Also BY COIL. Tin Mill term. Customers buy by coil or bi coil rather than cut sheets.

bias: bias the systematic (as opposed to random) error of an estimator.

Bias Current: The current used as a bias quantity in a biased relay.

Bias Current: The direct current made to flow between two points for controlling a circuit.

bias current : bias current the arithmetic average of the currents that flow in the input leads of an op-amp.

bias lighting : bias lighting technique used in video tubes to correct for undesirable artifacts such as lag. Applying a uniform light source to the surface of the tube (the photoconductive layer) will create a bias current in the tube, thereby minimizing the undesirable characteristics.

bias network : bias network a key aspect of microwave circuit design is to apply the proper DC bias to the appropriate terminals of transistors (e.g., FETs) without disturbing the AC microwave operation of the circuit. In some cases, “on-chip” DC circuitry needs to be designed so as to provide stable bias voltage/current conditions for the device even when the chip DC supply voltages vary (due to weakening batteries, etc.). The other aspect of bias network design is to isolate the DC network from interfering with the AC or RF/microwave operation of the circuit, and vice-versa. In a lumped element design, this is generally accomplished by a combination of spiral inductors and MIM capacitors.

bias voltage or current : bias voltage or current applied to a transistor allowing it to operate as an active amplifying or signal generating device. Typical voltage levels in GaAs FETs used in receivers are 1 to 7 volts between the drain and source terminals, and 0 to -5 volts on, or between, the gate and source terminals. For microwave systems, DC voltages and currents, provided by batteries or AC/DC converters required to “bias” transistors to a region of operation where they will either amplify, mix or frequency translate, or generate (oscillators) microwave energy. Since energy can be neither created nor destroyed, microwave energy amplification or creation is accomplished at the expense of DC energy.

Biased Relay: A relay in which the characteristics are modified by the introduction of some quantity, and which is usually in opposition to the actuating quantity.

biasing : biasing the technique of applying a direct-current voltage to a transistor or an active network to establish the desired operating point.

bible : bible nickname for the National Electrical Code.

BIBS : BIBS See bounded-input bounded-state stability.

BiCMOS : BiCMOS integrated circuit technology/process that incorporates bipolar and complementary metal oxide semiconductor devices on the same die.

BICSI: (Building Industry Consulting Service International) An industry association dedicated to the design and installation of communication wiring.

Bidirectional: Any system having two directions.

bidirectional pattern : bidirectional pattern a microphone pickup pattern resembling a figure eight, in which the device is most sensitive to sounds on either side of the pickup element.

bi-directional resonator : bi-directional resonator a standing wave resonator or a ring-resonator in which the electromagnetic waves circulate in both the clockwise and counter-clockwise directions.

bi-directional laser : bi-directional laser a ring laser with both clockwise and counter-clockwise circulating waves. Useful as a rotation rate sensor.

bifilar winding : bifilar winding a two-wire winding. It is often utilized in stepper motors to permit a unipolar power supply to produce alternating magnetic poles by energizing only half of the bifilar winding at any one time.

Bifluoride Feeder: A machine in the Tin Mill that automatically puts bifluoride into the plater bath.

Bi-fuel vehicle: A motor vehicle that operates on two different fuels, but not on a mixture of

the fuels. Each fuel is stored in a separate tank.

bifurcation : bifurcation a term from Chaos Theory referring to a sudden change in the qualitative behavior of the solutions.

big endian : big endian a storage scheme in which the most significant unit of data or an address is stored at the lowest memory address. For example, in a 32-bit, or four-byte word in memory, the most significant byte would be assigned address i , and the subsequent bytes would be assigned the addresses: $i + 1$, $i + 2$, and $i + 3$. Thus, the least significant byte would have the highest address of $i + 3$ in a computer implementing the big endian address assignment. "Big endian" computers include IBM 360, MIPS R2000, Motorola M68000, SPARC, and their successors.

Big Winch: The tool used to spot (or position) the rail cars for unloading. It is located on the north end of the unloading area.

Bikeway : a path or lane use of bikes or bicycles

Bikeway (Lighting): Any road, street, path or way that is specifically designated as being open to bicycle travel, regardless of whether such facilities are designed for the exclusive use of bicycles.

BIL: 1) See Basic Insulation Level. 2) See Basic Impulse Level.

BIL: [see basic insulation level]

BIL: Basic impulse level. Basic Insulation Level

BIL: Basic Insulation Level is a measure of the ability of the insulation system to withstand very high voltage surges. For example, a 600 volt class transformer has a 10KV BIL rating.

BIL : BIL See basic lightning impulse level and basic impulse insulation level.

Bilateral agreement: A written statement signed by two parties that specifies the terms for exchanging energy.

bilateral contract : A direct contract between the power producer and user or broker outside of a centralized power pool.

Bilateral energy transaction: A transaction between two willing parties who enter into a physical or financial agreement to trade energy commodities. Bilateral transactions entail reciprocal obligations and can involve direct negotiations or deals made through brokers.

bility : bility if for every bounded input (See BIBO stability), and for arbitrary initial conditions, there exists a scalar such that the resultant state satisfies, then the system is said to be bounded-input bounded-state stable.

Billet: A solid semifinished round or square product that has been hot worked by forging, rolling or extrusion.

Billet Container: The part of the extrusion press into which the billet to be extruded is placed.

Billing period: The time between meter readings. It does not refer to the time when the bill was sent or when the payment was to have been received. In some cases, the billing period is the same as the billing cycle that corresponds closely (within several days) to meter-reading dates. For fuel oil and LPG, the billing period is the number of days between fuel deliveries.

billion: A thousand million or 10^9 (US). Also a million million (British)

Bimetal Circuit Breaker: A Bimetal Circuit Breaker is a circuit protection device that is appropriate for low voltage applications. The active element of the breaker is a strip of 2 different metals bonded together, known as a bimetal strip. Under normal operation, the strip spans a distance between two contactors, completing the circuit. When the circuit is thermally

overloaded, the strip bends as a result of the difference in the linear thermal expansion coefficients between the two metals in the bimetal strip. When this happens, contact is broken and the circuit is open, preventing damage to the circuit.

Bimetallic: A strip of two metals having different coefficients of expansion, bonded together usually in the form of a spiral or strip. Movement of the bonded metals caused by a temperature change can initiate a change in a device or circuit.

bimetallic strip: A strip composed of two different metals welded together in such a way that a rise of temperature will cause it to deform as a result of the unequal expansion. It is used in switches for control of temperature.

Bin Vibrators: A Bin Vibrator is a device that is used to apply a controlled vibration to a bin, hopper, chute, or other similar bulk material transfer system. The vibration breaks the friction between granules and also prevents the material from sticking to the walls of the bin. This prevents blockages and allows material to flow more freely through the bin.

Bin Weighing Systems: A Bin Weighing System is any system used to accurately measure weight of bulk materials. Typically, bin weighing systems are non-contact and can be mounted to an existing hopper or bin. This makes them adaptable to a wide variety of industrial situations.

Binary: In electronics, a number system that has two as its base; therefore any position has only two possible values, 0 or 1. A signal that has only two possible states at any instance.

Binary Alloy: An alloy containing two elements, apart from minor impurities, as brass containing the two elements copper and zinc.

binary cell: An element in a computer which can store information by virtue of its ability to remain stable in one of two possible states.

binary coded decimal: [see BCD]

Binary digit. : See bit.

binary notation: A system of numbers which has only two different integer values 0 and 1.

Binary synchronous communication (BSC): A digital-to-digital bipolar encoding method used in America to provide synchronization of long strings of 0s.

Binary. : Digital system with 2 states, 1 and 0; contrast with octal, decimal and hexadecimal.

Binder: Usually a spirally served tape or thread used for holding assembled cable components in place awaiting further manufacturing operations.

binocular imaging : binocular imaging the formation of two images of a scene from two different positions so that binocular vision can be performed, in a similar manner to the way humans deploy two eyes.

binocular vision : binocular vision the use of two images of a scene, taken (often simultaneously) from two different positions, to estimate depth of various point features, once correspondences between pairs of image features have been established.

bioanalytical sensor : bioanalytical sensor of a chemical sensor for determining the amount of a biochemical substance. This type of sensor usually makes use of one of the following types of biochemical reactions: enzyme-substrate, antigen-antibody, or ligand-receptor.

Biodiesel: A fuel typically made from soybean, canola, or other vegetable oils; animal fats; and recycled grease. It can serve as a substitute for petroleum-derived diesel or distillate fuel. For EIA reporting, it is a fuel composed of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of

ASTM (American Society for Testing materials) D 6751.

Biofuels: Liquid fuels and blending components produced from biomass feedstocks, used primarily for transportation.

Biogenic: Produced by biological processes of living organisms. Note EIA uses the term "biogenic" to refer only to organic nonfossil material of biological origin.

Biogenic emissions: Emissions that are naturally occurring and are not significantly affected by human actions or activity.

Biological shield: A mass of absorbing material (e.g., thick concrete walls) placed around a reactor or radioactive material to reduce the radiation (especially neutrons and gamma rays respectively) to a level safe for humans.

Biomass: Organic nonfossil material of biological origin constituting a renewable energy source.

biomass: Any plant-derived organic matter available on a renewable basis, including dedicated energy crops and trees, agricultural food and feed crops, agricultural crop wastes and residues, wood wastes and residues, aquatic plants, animal wastes, municipal wastes, and other waste materials.

biomass : biomass General term used for wood, wood wastes, sewage, cultivated herbaceous and other energy crops, and animal wastes.

Biomass gas: A medium Btu gas containing methane and carbon dioxide, resulting from the action of microorganisms on organic materials such as a landfill.

Biomass waste: Organic non-fossil material of biological origin that is a byproduct or a discarded product. Biomass waste includes municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural crop byproducts, straw, and other biomass solids, liquids, and gases; but excludes wood and wood-derived fuels (including black liquor), biofuels feedstock, biodiesel, and fuel ethanol. EIA biomass waste data also include energy crops grown specifically for energy production, which would not normally constitute waste.

Biomass-based diesel fuel: Biodiesel and other renewable diesel fuel or diesel fuel blending components derived from biomass, but excluding renewable diesel fuel coprocessed with petroleum feedstocks.

biomedical sensor : biomedical sensor a device for interfacing an instrumentation system with a biological system such as biological specimen or an entire organism. The device serves the function of detecting and measuring in a quantitative fashion a physiological property of the biological system.

biometric verifier : biometric verifier device that helps authenticate by measuring human characteristics.

Bi-phase shift keying (bpsk). : This is widely used for data transmission and for digitized speech using pcm. A constant period and constant amplitude has its phase shifted by 180 degrees to represent one binary state or not shifted at all to represent the other binary state. See fsk.

Bi-Pin Medium: A fluorescent lampholder having two contacts, used in pairs, with type T-8 tubular fluorescent lamps that are approximately 1" in diameter, having two contacts at each end.

Bi-Pin Miniature: Similar to medium Bi-Pin lampholder except for use with Type T-5 tubular fluorescent lamps that are 5/8" in diameter

Bipolar: A signal range that includes both positive and negative values (i.e., -10 to +10V).

bipolar : bipolar (1) a type of transistor that uses both polarities of carriers (electrons and holes) in its operation as a junction transistor. (2) a type of data encoding that uses both positive and negative voltage excursions.

Bipolar encoding : A digital-to-digital encoding method in which the 0 amplitude represents binary 0 and positive and negative amplitudes represent alternate 1s.

Bipolar Inputs: A bipolar signal or input in which the positive input swings both above and below the negative input.

Bipolar Junction Transistor: it is an P N junction formed active . Semiconductor device used for amplification of current . It is made up of three sections of P and N type semiconductors.

Bipolar junction transistor (BJT): A transistor type having two PN junctions, configured as NPN or PNP. May be used as an amplifier or switch.

bipolar junction transistor (BJT) : bipolar junction transistor (BJT) three-terminal nonlinear device composed of two bipolar junctions (collector-base, base-emitter) in close proximity. In normal operation, the voltage between base and emitter terminals is used to control the emitter current. The collector current either equals this (with BC junction in reverse bias), or goes into saturation (the BC junction goes into forward bias). Used for medium power (700 A) and medium speed (10 kHz) applications. In power electronics applications, BJTs are typically operated as switches, in either their fully on or off states, to minimize losses. The base current flowing into the middle of the device controls the on-off state, where continuous base current is required to be in the on state. A disadvantage is the low current gain.

bipolar memory : bipolar memory memory in which a storage cell is constructed from bipolar junction transistors. See also static random access memory (SRAM).

bipolar transistor: A transistor where both free electrons and holes are necessary for normal operation.

Bipolar transmission. : Method of sending binary data in which negative and positive states alternate; used in digital transmission facilities such as dds and t1. Sometimes known as polar transmission.

bipole : bipole DC system with two conductors, one positive and the other negative polarity. The rated voltage of a bipole is expressed as 100 kV, for example.

BIPV (Building-Integrated Photovoltaic): A term for the design and integration of Photovoltaic into the building envelope, typically replacing conventional building materials. This integration may be in vertical facades, replacing view glass, spandrel glass, or other facade material; into semitransparent skylight systems; into roofing systems, replacing traditional roofing materials; into shading "eyebrows" over windows; or other building envelope systems.

biquad : biquad an active filter whose transfer function comprises a ratio of second-order numerator and denominator polynomials in the frequency variable.

Birdnesting. : In electronic warfare, a clustering of window strips causing them not to separate and disperse after being dispensed.

bird's beak : bird's beak feature seen in cross-sectional photomicrographs of silicon gate transistors caused by encroachment of oxide under the gate.

birefringence : birefringence The property of certain materials to display different values of the refractive index for different polarizations of a light beam.

birthmark : birthmark a stamp on a wooden utility pole which denotes its manufacturer, date of manufacture, size, and method of preservation.

bisection: Division into two equal parts.

Bismuth: Chemical symbol Bi. A soft, course crystalline heavy metal with a silvery white color and pinkish tinge; usually produced as a by product of copper, lead and other metals. Has a thermal conductivity lower than all other metals except mercury. Used as alloying agent but leading use is in pharmaceuticals.

bispectra : bispectra computation of the frequency distribution of the EEG exhibiting nonlinear behavior.

bispectrum : bispectrum the Fourier transform of the triple correlation function. It preserves phase information and uniquely represents a given process in the frequency domain. It can be used to identify different types of nonlinear system response.

bistable : bi-stable pertaining to a device with two stable states, e.g., bi-stable multivibrator; circuit that has two possible output states and that will remain in its current state without requiring external inputs; a flip-flop.

bi-stable : bistable pertaining to a device with two stable states. Examples: bistable multivibrator, flip-flop. See also bistable system.

bistable system : bistable system an optical system where the transmission can take on two possible values. See also bistable.

Bit: A binary digit; the smallest unit of information; 1 or 0.

Bit: A single binary digit, can be either a 0 or 1.

bit: The unit of information in information theory. The amount of information required to specify one of two alternatives 0 and 1.

bit : bit (1) the fundamental unit of information representation in a computer, short for "binary digit" and with two values usually represented by "0" and "1." Bits are usually aggregated into "bytes" (7 or 8 bits) or "words" (12–60 bits).

bit allocation : bit allocation the allocation of bits to symbols with the aim of achieving some compression of the data. Not all symbols occur with the same frequency. Bit allocation attempts to represent frequently occurring symbols with fewer bits and assign more bits to symbols that rarely appear, subject to a constraint on the total number of bits available. In this way, the average string requires fewer bits. The chosen assignment of bits is usually the one that minimizes the corresponding average coding distortion of the source over all possible bit assignments that satisfy the given constraint. Typically sub-sources with larger variances or energy are allocated more bits, corresponding to their greater importance. See also transform coding.

Bit Banging: The software technique for serial communication. In this system software microcontroller is responsible for signal and level parameters.

Bit Error Ratio: The ratio of bit errors divided by total numbers of transferred bits is defined as bit error ratio. It is a unit less value.

Bit interval: The time required sending one bit.

bit line : bit line used in, for example, RAM memory devices (dynamic and static) to connect all memory cell outputs of one column together using a shared signal line. In static RAM, the

“bit” line together with its complemented signal “-bit” feeds a “sense amplifier” (differential in this case) at the bottom of the column serving as a driver to the output stage. The actual cell driving the bit line (and -bit) is controlled via an access transistor in each cell. This transistor is turned on/off by a “word” line, a signal run across the cells in each row.

bit parallel : bit parallel a method to transmit or process information in which several bits are transmitted in parallel. Examples: a bit parallel adder with 4-bit data has 8 input ports for them (plus an initial carry bit); an 8-bit parallel port includes true 8-bit bi-directional data lines.

bit period : bit period the time between successive bits in data transmission or data recording. At the transmitter (or recorder) the timing is established by a clock. At the receiver (or reader) an equivalent clock must be recovered from the bit stream.

bit plane: bit plane the binary $N \times N$ image formed by selecting the same bit position of the pixels when the pixels of an $N \times N$ image are represented using k bits.

bit plane encoding : bit plane encoding lossless binary encoding of the bit planes is termed bit plane encoding. The image is decomposed into a set of k , $N \times N$ bit planes from the least significant bit to $k - 1$ most significant bits and then encoded for image compression.

Bit rate: The number of bits transmitted per second.

bit rate : bit rate (1) a measure of signaling speed; the number of bits transmitted per second. Bit rate and baud are related but not identical. Bit rate is equal to baud times the number of bits used to represent a line state. For example, if there are sixteen line states, each line state encodes four bits, and the bit rate is thus four times the baud. See also baud.

Bit stuffing: In HDLC, the addition of an extra 0 to prevent the receiver from mistaking the data for a flag. In synchronous TDM, a technique that adds bits for synchronization purposes.

Bit stuffing. : See zero insertion.

Bit, Tool (Cutter): A hardened steel bar or plate that is shaped according to the operation to be performed and the material to be machined.

Bit. : Contraction of binary digit; smallest unit of information and basic unit in digital data communications. A bit can have a zero or a one value (a mark or space in data communications terminology).

Bit-level encryption: A conventional encryption method in which the data are first divided into blocks of bits prior to encryption.

bitmapped image : bitmapped image a digital image composed of pixels. Bitmapped images are resolution-dependent, i.e., if the image is stretched, the resolution changes. Also called a raster image. See also image, pixel, vector image.

Bit-oriented protocol: A protocol in which a frame is seen as a bit stream.

Bit-oriented. : Used to describe communications protocols (such as sdhc) in which control information may be coded in fields as small as a single bit in length. Contrast with character-oriented.

bits per pixel : bits per pixel the number of bits used to represent each pixel in a digital image. Typical grayscale images have 8 bits per pixel, giving 256 different gray levels. True color images have 24 bits per pixel, or 8 bits for each of the red, green, and blue pixels. Compressed image sizes are often represented in bits per pixel, i.e., the total number of bits used to represent the compressed image divided by the total number of pixels.

Bits per second (bps): A measurement of data speed; bits transmitted per second.

Bitumen: A naturally occurring viscous mixture, mainly of hydrocarbons heavier than pentane, that may contain sulphur compounds and that, in its natural occurring viscous state, is not recoverable at a commercial rate through a well.

bitumen: A term covering numerous "tarry" mixtures of hydrocarbons.

Bituminous coal: A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content usually is less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million Btu per ton on a moist, mineral-matter-free basis. The heat content of bituminous coal consumed in the United States averages 24 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

BJT: Bipolar Junction Transistor

Black Annealing: A process of box annealing or pot annealing ferrous alloy sheet, strip or wire after hot working and pickling.

black body: Thermal radiator that absorbs completely all incident radiation, whatever the wavelength, the direction of incidence or the polarization.

Black box, black box corporation. : The leading data communications and computer device mail-order company; publishes and distributes the black box catalogue. Blip.

black burst : black burst a TV black video signal containing horizontal and vertical sync, color burst, and setup (i.e., a composite video black signal). Black burst is also called "color black." A black burst signal is often used in the video studio to provide synchronizing pulses.

Black check count (BCC): One or two characters used for error detection at the end of a BSC frame.

Black Iron: Uncoated steel product.

black level : black level the portion of the video signal pertaining to the lower luminance (brightness) levels.

Black liquor: A by product of the paper production process, alkaline spent liquor, that can be used as a source of energy. Alkaline spent liquor is removed from the digesters in the process of chemically pulping wood. After evaporation, the residual "black" liquor is burned as a fuel in a recovery furnace that permits the recovery of certain basic chemicals.

Black lung benefits: In the content of the coal operation statement of income, this term refers to all payments, including taxes, made by the company attributable to Black Lung.

Black Oil Tempered Spring Steel Strip (Scaleless Blue): A flat cold rolled usually .70/.80 medium high carbon steel strip, blue black in color, which has been quenched in oil and drawn to desired hardness. While it looks and acts much like blue tempered spring steel and carries a Rockwell hardness of C44/47, it has not been polished and is lower in carbon content. Used for less exacting requirements than clock spring steel, such as snaps, lock springs, hold down springs, trap springs, etc. It will take a more severe bend before fracture than will clock spring, but it does not have the same degree of spring back.

Black Plate: A light weight or a thin uncoated steel sheet or strip so called because of its dark oxide coloring prior to pickling. It is manufactured by two different processes. (1) Form sheet bar on single stand sheet mills or sheet mills in tandem. This method is now almost obsolete. (2) On modern, high speed continuous tandem cold reduction mills from coiled hot rolled

pickled wide strip into ribbon wound coils to finished gage. Sizes range from 12 to 32 in width, and in thicknesses from 55 lbs. to 275 lbs. base box weight. It is used either as is for stampings, or may be enameled or painted or tin or terne coated.

black start : black start the task of re-starting an iso-lated power system which is completely de-energized. Most generating plants require substantial external electric power to start. Thus a black start may be initiated by hand-starting gas turbine generators or by opening the gates of a hydroelectric generator some-where in the system.

blackbody : blackbody theoretically contrived object that gives rise to the so-called “black body ra-diation.” One might imagine a closed surface object (say of metal) possessing one open-ing that connects the interior surface with the outside world. When the object is heated, the opening becomes a perfect “black” radiator. Such radiation depends on temperature only.

Blackening Scab: A form of casting defect related to an improper coating rather than to the sand.

Blacking Hole: Irregular shaped surface cavities in a casting containing carbonaceous matter. Caused by spilling off of the blacking from the mold surface.

Blackout: The complete interrupting of load to an electric utility customer or group of customers.

blackout: A total loss of the commercial electrical power lasting for more than one cycle. Blackouts can result from any of a number of problems, ranging from Acts of God (high winds, storms, lightning, falling trees, floods, etc.) to situations such as cables being cut during excavation, equipment failures at the utility, vandalism, corrosion, etc. Used synonymously with Outage.

Blackout: it is referred as non airing or broadcasting of any program or channel in media.

Blackout: A condition where power fails altogether, causing the immediate stoppage of any device that functions on electrical current.

blackout : blackout total loss of power to the entire power system.

blackout : A power loss affecting many electricity consumers over a large geographical area for a significant period of time.

Bladder: A separator or diaphragm usually found in a chamber to facilitate separation of two (2) fluids or gases.

Blade Server: A server chassis housing having multiple thin and modular circuit boards.

Blank: Solid metal disk or plate inserted into a line to prevent the flow of gases or liquids through the line.

blanket : blanket an insulating rubber mat which is fitted temporarily over energized conductors to protect nearby workers.

blanking : process of making the trace, or parts of a trace, invisible.

blanking : blanking the electronic control circuitry that blanks the television raster during hori-zontal and vertical retrace.

blanking time : blanking time the short time interval when both switches in a leg of an inverter bridge must be off in order to prevent short circuiting the DC input. This is necessary be-cause non-ideal switches cannot turn on and off instantaneously. Thus, after one switch is turned off in an inverter leg, the complimen-

Blast Cleaning (Blasting): A process for cleaning or finishing metal objects by use of an air jet or centrifugal wheel that propels abrasive particles (grit, sand, or shot) against the surfaces

of the workpiece at high velocity.

Blast furnace: A furnace in which solid fuel (coke) is burned with an air blast to smelt ore.

Blast Furnace Gas: By product gas created by the iron making process which is used as fuel for the boilers.

Blast Gate Valve: Blast gate valves are mechanical devices used to restrict or shut-off the flow of a fluid or gas in a pressurized piping system. Blast gate valves are commonly used in dust collection systems to prevent the backflow of dust particles when the vacuum suction is stopped. Blast gate valves are also found in other high pressure applications such as furnaces, boilers, and incinerators.

Blast-furnace gas: The waste combustible gas generated in a blast furnace when iron ore is being reduced with coke to metallic iron. It is commonly used as a fuel within steel works.

Blasting (Blast Cleaning): A process for cleaning or finishing metal objects by use of an air blast or centrifugal wheel that throws abrasive particles against the surface of the work pieces. Small, irregular particles of steel or iron are used as the abrasive in grit blasting, and steel or iron balls in shot blasting.

bleaching: Removing the colour from coloured materials by chemical transformation.

Bleed Off: To divert a specific, controllable portion of pump delivery directly to reservoir.

Bleeder: A defect wherein a casting lacks completeness due to molten metal draining or leaking out of some part of the mold cavity after pouring has stopped.

Blending components: See Motor gasoline blending components.

Blending plant: A facility that has no refining capability but is either capable of producing finished motor gasoline through mechanical blending or blends oxygenates with motor gasoline.

Blind Bore: A hole made in a workpiece that does not pass through it.

blind deconvolution : blind deconvolution the recovery of a signal $x(t)$ from $y(t)$ — the convolution of the signal with an unknown system $h(t)$: In power electronics applications, BJTs are typically operated as switches, in either their fully on or off states, to minimize losses. The base current flowing into the middle of the device controls the on-off state, where continuous base current is required to be in the on state. A disadvantage is the low current gain.

blind via : blind via a via connected to either the preliminary side or secondary side and one or more internal layers of a multilayer packaging and interconnecting structure.

blink : blink in computer display systems, a technique in which a pixel is alternatively turned on and off.

Blip/scan ratio. : The ratio of the number of observed echo pulses from a target to the number of radar sweeps during the period in which the target is in the antenna beam.

Blister: 1) Coating defect consisting of the formation of bubbles in a coating, which appear as hemispherical elevations. The blisters are hollow, and are usually caused by entrapped air or solvent. 2) A raised spot on the surface on the surface of metal due to expansion of gas which causes a subsurface metal separation such as inclusions and small laminations.

Blister Steel: High carbon steel produced by carburizing wrought iron. The bar, originally smooth, is covered with small blisters when removed from the cementation (carburizing) furnace.

Block: A high-speed data transfer in which the address of the data is sent followed by a

specified number of back-to-back data words.

block : block a group of sequential locations held as one unit in a cache and selected as whole. Also called a line. See also memory block.

block cipher : block cipher an encryption system in which a successive number of fundamental plaintext information symbols, usually termed a block of plaintext information, are encrypted according to the encryption key. All information blocks are encrypted in the same manner according to the transformation determined by the encryption key.

block code : block code a mapping of k input binary symbols into n output symbols.

block coding : block coding (1) an error control coding technique in which a number of information symbols, and blocks, are protected against transmission errors by adding additional redundant symbols. The additional symbols are usually calculated according to a mathematical transformation based on the so-called generator polynomial of the code. A block code is typically characterized by the parameters n ; k /, where k is the number of information symbols per data word, and n the final number of symbols in the code word after the addition of parity symbols or redundant symbols. The rate of a block code is given by k/n .

block diagram : block diagram a diagrammatic representation of system components and their inter-connections. In elementary linear systems, the blocks are often defined by transfer functions or state space equations while the interconnecting signals are given as Laplace transformations. Although the system blocks and signals have the same mathematical form, the blocks represent operators that act on the incoming signals while the signals represent functions of time.

block matching : block matching the process of finding the closest match between a block of samples in a signal and a block of equal size in another signal (or a different part of the same signal) over a certain search range. Closeness is measured by correlation or an error metric such as mean square error. Used in data compression, motion estimation, vector quantization, and template matching schemes.

block multiplexer channel: block multiplexer channel can be assigned to more than one data transfer at a time. It always transfers information in blocks, with the channel released for competing transfers at the end of a block. See also byte multiplexer channel, selector channel.

Block Off: 1) Wooden separators which are used at both the bottom of a lift and between IPM's (bundles) of a lift. 2) The act of placing 4x4s between the lifts in the piler's box.

block transfer : block transfer the transmission of a significantly larger quantity of data than the minimum size an interconnect is capable of transmitting, without sending the data as a number of small independent transmissions (the goal being to reduce arbitration and address overhead).

block transform : block transform a transform that divides the image into several blocks and treats each block as an independent image. The transform is then applied to each block independently. This occurs in the JPEG standard image compression algorithm, where an image is divided into 8x8 blocks and the DCT is applied independently to each block. Usually the blocks do not overlap each other, that is, they have no signal samples in common. See also transform coding,

Block. : Same as transmission block.

Blocked Chute Detector: A Blocked Chute Detector is a device that is used to determine the presence of a blockage and subsequently issue a stop command to the conveyor system. While

simple systems might use a mechanical flap, sophisticated blocked chute detectors use microwave transmitters and receivers to detect blockages via changes absorption and/or reflection of microwaves in the presence of solids.

Blocked synchronization transmission (BLAST): A more powerful version of XMODEM. Featuring full-duplex transmission and sliding window flow control.

Blocker: Preform die or impression, used when part cannot be made in a single operation.

Blocking: An event that occurs when a switching network is working at its full capacity and cannot accept more input.

blocking: blocking state entered if a new user finds all channels or access mechanisms busy and hence is denied service. Generally accompanied by a busy signal. The call blocking probability may be given by the Erlang B or Erlang C formula. See also adequate service, multiple access interference (MAI).

Blocking (1). : The process of grouping data into transmission blocks.

blocking (2). : (in lan technology). The inability of a pabx to service connection requests, usually because its switching matrix can only handle a limited number of connections simultaneously. Blocking occurs if a call request from a user cannot be handled due to an insufficient number of paths through the switching matrix; blocking thus prevents free stations from communication.

blocking artifact : blocking artifact the visibility in an image of rectangular subimages or blocks after certain types of image processing. Also called blocking effect distortion.

Blocking diode: A diode used to restrict or block reverse current from flowing backward through a module. [UL 1703] Alternatively, diode connected in series to a Photovoltaic string; it protects its modules from a reverse power flow and, thus, against the risk of thermal destruction of solar cells.

Block-multiplexor channel. : (in ibm systems) a multiplexor channel that interleaves with bytes of data; also called byte-interleaved channel. Contrast with selector channel.

Block-rate structure: An electric rates schedule with a provision for charging a different unit cost for various increasing blocks of demand for energy. A reduced rate may be charged on succeeding blocks.

blocks world : blocks world a visual domain, typical of early studies on machine vision, in which objects are light, plane-faced solids over a dark background.

Bloom: (1) Ancient Definition: iron produced in a solid condition directly by the reduction of ore in a primitive furnace. The carbon content is variable but usually low. Also known as bloomery iron. The earliest iron making process, but still used in underdeveloped countries. (2) Modern Definition: a semi finished hot rolled steel product, rectangular in section, usually produced on a blooming mill but sometimes made by forging.

Bloomery: A primitive furnace used for direct reduction of ore to iron.

blooming : blooming an area of the target that is unstable due to insufficient beam current. The area normally appears as a white puddle without definition. Insufficient beam current may be the result of low beam control setting.

Blooming (1): (in electronic warfare) the dispersal of chaff after launching.

Blooming (2): The expansion of the echo on a radar display due to the dispersal of chaff after launching

Blooming Mill: A mill used to reduce ingots to blooms, billets slabs, sheet bar etc.,

Blow Back: A coating defect consisting of a lower coating film weight on the bottom of the coated sheet caused by high velocity air in the oven. Blow back usually occurs with high solids coatings which have little solvent to evaporate and set the film.

Blow Down: Process that rids boiler feed water of solids and maintains the proper chemical balance of the feed water. Blow down can also be used to rid drum(s) of excess water.

blow up : blow up a relatively sudden and usually catastrophic increase in beam size generally caused by some magnetic field error driving the beam to resonance.

Blowdown Tanks: A Blowdown Tank is a tank incorporated into a boiler system to safely discharge blowdown. Blowdown refers to boiler water which has an elevated level of dissolved solids. Over time, makeup feedwater is introduced to the boiler to maintain an appropriate water level as water vapor leaves the system through steam leaks, etc. This is the source of additional dissolved solids into the system. These dissolved solids must be periodically removed from the boiler system as they adversely effect efficiency and service life of the boiler. A Blowdown Tank allows the blowdown to be safely brought down to appropriate pressure and temperature before disposal.

Blower: A fan used to force air under pressure.

Blowhole 2: A cavity which was produced during the solidification of metal by evolved gas, which in failing to escape is held in pockets.

Blowing: The act of installing fiber optic cable into a duct using air pressure.

Blowing: To be in a state of motion. Here action force may be air.

BLS: Bureau of Labor Statistics within the U.S. Department of Labor

Blue Annealing: Heating hot rolled ferrous sheet in an open furnace to a temperature within the transformation range and then cooling in air, in order to soften the metal. The formation of a bluish oxide on the surface is incidental.

Blue Print: A pen or ink line drawing reproduced (printed) on sensitized paper by direct exposure.

Blue Vitriol Copper Sulfate: A layout solution which turns a copper color when applied to a clean, polished metal surface.

Bluetooth: A wireless computing and telecommunications specification that defines how mobile personal computing devices work with each other and with regular computers and phone systems within a close range.

Bluetooth: Bluetooth is wireless device used to transfer the data over the short and limited distance. It uses the short wavelength UHF radio waves.

Bluing: Subjecting the scale free surface of a ferrous alloy to the action of air, steam, or other agents at a suitable temperature, thus forming a thin blue film of oxide and improving the appearance and resistance to corrosion. NOTE: This term is ordinarily applied to sheet, strip, or finished parts, It is used also to denote the heating of springs after fabrication in order to improve their properties.

Blumlein : Blumlein a water-filled transmission line that serves as a pulse generator using a wave propagation principle. The line is folded over on itself and is capable of voltage doubling across its load due to having initially both sides of the load on high potential.

Blumlein bridge : Blumlein bridge an AC bridge, two arms of which are two serially connected tightly coupled inductive coils. The point of connection of these coils is usually grounded, and the coupling is arranged in such a way that for the currents simultaneously

entering or leaving the other ends of the coils the voltage drop between the ends is close to zero. If one of the currents is entering and another is leaving, then the voltage drop is essential. This creates a sensitive current-comparing bridge having application in capacitance transducers.

blurring : blurring (1) the defocusing effect produced by the attenuation of high-frequency components, e.g., obtained by local averaging operators, possibly applied directionally (motion blurring). (2) the broadening of image features, relative to those which would be seen in an ideal image, so that features partly merge into one another, thereby reducing resolution. The effect also applies to 1-D and other types of signal.

Blush: A coating defect consisting of the whitening of a cured film which results in a translucent or opaque appearance with accompanying loss of gloss. Blushing usually occurs during the pasteurization or steam processing of films which are undercured or water sensitive.

BLVDS: Bus low-voltage differential signaling

BNC connector : BNC connector "Baby" N connector. Commonly used coaxial connector with both male and female versions used below microwave frequencies.

Bnc. : A bayonet-locking connector for miniature coax; bnc is said to be short for bayonet-neil-concelman (see n connector and c connector). Contrast with tnc.

board : board the physical structure that houses multiple chips, and connects them with traces (busses).

board of trade unit or BOT unit.: Unit of electrical energy (British) supplied to the consumer. Equal to 1 kWh. Energy obtained when a power of 1 kW of power is maintained for 1 hour.

Bobbins: Metal spools used for taking up drawn wire and subsequently used for payout packages in cabling and stranding equipment.

bode plot: Semi-log plots of the magnitude (in decibel) and phase angle of a transfer function (or performance) against frequency.

Bode plot : Bode plot a graphical characterization of the system frequency response: the magnitude of the frequency response $|H(j\omega)|$; $-1 < \alpha < 1$ in decibels, and the phase angle $\angle H(j\omega)$; $-1 < \alpha < 1$, are plotted. For example, a system described by the transfer function has the Bode plot shown in the following figure. See also frequency response.

Body Centered: Having the equivalent lattice points at the corners of the unit cell, and at its center; sometimes called centered, or space centered.

BOE: Barrels of Oil Equivalent (used internationally)

Boehme equipment (1). : Transmitting. Used for sending international morse code characters by passing wheatstone tape through a keying head.

Boehme equipment (2). : Receiving. Used for recording international morse code characters by ink siphon equipment on a moving paper tape.

Boil: Agitation of a bath of metal caused by the liberation of a gas beneath its surface. May be deliberately induced by the addition of oxidizing material to a bath containing excess carbon. In the later case it is called a carbon boil and CO or CO₂ are liberated.

Boiler: A device for generating steam for power, processing, or heating purposes; or hot water for heating purposes or hot water supply. Heat from an external combustion source is transmitted to a fluid contained within the tubes found in the boiler shell. This fluid is

delivered to an end-use at a desired pressure, temperature, and quality.

boiler : boiler a steam generator that converts the chemical energy stored in the fuel (coal, gas, etc.) to thermal energy by burning. The heat

Boiler Feed Pumps: A boiler feed pump controls the volume of water fed into a boiler system. A boiler loses water at a certain rate to evaporation from steam leaks, etc. The feed pump adds water to the system to maintain an appropriate water level. Feed pumps can either be intermittent (float switch activated) or continuous in operation.

Boiler fuel: An energy source to produce heat that is transferred to the boiler vessel in order to generate steam or hot water. Fossil fuel is the primary energy source used to produce heat for boilers.

Boiler Safety Valves: A Boiler safety valve relieves pressure from a steam boiler system if the pressure inside the tank reaches a critical level. This prevents catastrophic failure of the boiler.

Boiler Tubes: Boiler tubes carry hot water or steam from a boiler and function as a heat exchanger, transferring heat from the closed boiler system to area to be heated.

boiling: The state of a liquid at its boiling point when the maximum vapour pressure of the liquid is equal to the external pressure to which the liquid is subject, and the liquid is freely converted into vapour.

boiling point: The temperature at which the maximum vapour pressure of the liquid is equal to the external pressure. The temperature at which the liquid boils freely under that pressure.

Boiling water reactor (BWR): A common type of light water reactor (LWR), where water is allowed to boil in the core thus generating steam directly in the reactor vessel. (cf PWR)

boiling water reactor or BWR: A nuclear reactor in which water is used as coolant and moderator. Steam is thus produced in the reactor under pressure and can be used to drive a turbine.

Boiling-water reactor (BWR): A light-water reactor in which water, used as both coolant and moderator, is allowed to boil in the core. The resulting steam can be used directly to drive a turbine.

Bolometer: Infrared thermometer detector consisting of a resistance thermometer arranged for response to radiation.

Bolster (Die Block): A tool or reinforcing part which supports the backer which, in turn, supports an extruding die against the pressure of extrusion.

Bolt Kit: A set of bolts or screws that are selected to suit a particular application, i.e. pre selected length, threads and strength to match the mounted component.

bolted fault : bolted fault a bolted fault is a short circuit fault with no fault resistance. Bolted faults deliver the highest possible fault current for a given location and system configuration, and are used in selecting equipment withstand and interrupting ratings and in the setting of protective relays.

Bolt-In Fuse: A fuse which is intended to be bolted directly to bus bars, contact pads or fuse blocks.

Boltzmann machine : Boltzmann machine in its simplest form, a discrete time Hopfield network that employs stochastic neurons and simulated annealing in its procedure for updating output values. More generally it can have hidden units and be subjected to supervised training so as to learn probabilities of different outputs for each class of inputs.

Boltzmann's constant. : A physical constant; $k=1.38 \times 10^{-23}$ watt - sec/ok

bond: bond that which binds two atoms together.

bond pad : bond pad areas of metallization on the IC die that permit the connection of fine wires or circuit elements to the die.

Bond Strength: Amount of adhesion between surfaces, e.g. in cemented ribbon cable.

bonded magnet : bonded magnet a type of magnet consisting of powdered permanent magnet material, usually isotropic ceramic ferrite or neodymium-iron-boron, and a polymer binder, typically rubber or epoxy, this magnet material can be molded into complex shapes.

Bonded petroleum imports: Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are (1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade; or (2) withdrawn from storage with duty paid for domestic use.

Bonderized Coating: A thin film of phosphate pretreatment applied to a steel surface (bare or zinc coated) to enhance paintability.

Bonderizing: The coating of steel with a film composed largely of zinc phosphate in order to develop a better bonding surface for paint or lacquer.

Bonding: The joining of metallic parts to form an electrically conductive path that will ensure electrical continuity and the capacity to conduct any current to be present in a safe manner.

bonding: A complete and permanent electrical connection. The permanent joining of metallic parts to form an electrically conductive path that ensures electrical continuity and the capacity to conduct safely any current likely to be imposed.

Bonding: it may be combining together the components by some organic or other solvent.

Bonding: The permanent adhesion of metallic parts forming an electrically conductive path.

bonding : bonding the practice of ensuring a low-resistance path between metallic structures such as water lines, building frames, and cable armor for the purpose of preventing lightning arcs between them.

Bonding Clay (Bonderise): Any clay suitable for use as a bonding material.

bonding conductor : A protective conductor providing equipotential bonding.

Bonding Jumper: A bare or insulated conductor used to ensure the required electrical conductivity between metal parts required to be electrically connected. Frequently used from a bonding bushing to the service equipment enclosure to provide a path around concentric knockouts in an enclosure wall - also used to bond one raceway to another.

Bonding Jumper: A reliable conductor used to ensure the required electrical conductivity between metal parts required to be electrically connected.

Bone coal: Coal with a high ash content; it is dull in appearance, hard, and compact.

Book value: The portion of the carrying value (other than the portion associated with tangible assets) prorated in each accounting period, for financial reporting purposes, to the extracted portion of an economic interest in a wasting natural resource. Book. The portion of the carrying value (other than the portion associated with tangible assets) prorated in each accounting period, for financial reporting purposes, to the extracted portion of an economic interest in wasting natural resource.

Booked costs: Costs allocated or assigned to inter-departmental or intra company transactions, such as on-system or synthetic natural gas (SNG) production and company-

owned gas used in gas operations and recorded in company books or records for accounting and/or regulatory purposes.

Boolean: Boolean an operator or an expression of George Boole's algebra (1847). A Boolean variable or signal can assume only two values: TRUE or FALSE. This concept has been ported in the field of electronic circuits by Claude Shannon (1938). He had the idea to use the Boole's algebra for coding the status of circuit: TRUE/FALSE as HIGH/LOW as CLOSE/OPEN, etc.

boolean algebra: A branch of symbolic logic used in computers. Logical operations are performed by operators such as "and", "or", in a way analogous to mathematical signs.

Boolean algebra : Boolean algebra the fundamental algebra at the basis of all computer operations. See also the other definitions with Boolean as the first word.

Boolean expression : Boolean expression the Boole's algebra, in which can appear Boolean variables/signals and Boolean oper-ators. Boolean expressions are used for de-scribing the behavior of digital equipments or stating properties/conditions in programs.

Boolean function : Boolean function common designation for a binary function of binary variables.

Boolean logic : Boolean logic the set of rules for logical operations on binary numbers.

Boolean operator : Boolean operator the classical Boolean operators are AND, OR, NOT. Other oper-ators such as XOR, NAND, NOR, etc., can be easily obtained based on the fundamen-tal ones. In hardware these are implemented with gates, see for example AND gate.

Boomer: A lineman that moves from job to job.

Boost Charge: A charge applied to a battery which is already near a state of full charge, usually of short duration.

Boost Charge: Boost charging is referred as the charging rate higher than to normal charging rate. In this system generally current and voltage are increased in systematic way.

Boost Converter: It is the process of getting the output greater than input voltage. It is class of switched-mode power supply .

boost converter : boost converter a circuit configuration in which a transistor is switched by PWM trig-ger pulses and a diode provides an inductor-current continuation path when the transistor is off. During the transistor on-time, the cur-rent builds up in the inductor. During the transistor off-time, the voltage across the in-ductor reverses and adds to the input voltage, as a result, the output voltage is greater than the input voltage.

Booster: A generator inserted in series in a circuit to add or subtract from the circuit voltage.

Booster Transformer: A current transformer whose primary winding is in series with the catenary and secondary winding in the return conductor of a classicallyfed A.C. overhead electrified railway.

Booster Transformer: It is type of transformer used to make adjustment to voltage applied to equipments. It is used in UPS of computers.

boot record : boot record structure at the beginning of a hard disk that specifies information needed for the start up and initialization of a com-puter and its operating system. This record is kept and displayed by the booting program.

Bootstrap: Computer program uploading technique with some initial instructions.

bootstrap : bootstrap (1) a technique using positive feedback to change the effective impedance at a node, for example, to reduce capacitance. (2) to initialize a computer system

into a known beginning state by loading the operating system from a disc or other storage to computer's working memory. This is done by a firmware boot program. Also called boot for short.

Bootstrap protocol (BOOTP): The protocol that provides configuration information from a table.

Borderline customer: A customer located in the service area of one utility, but supplied by a neighboring utility through an arrangement between the utilities.

Boresight tower. : A signal radiator mounted on a tower providing a fixed target at known azimuth and elevation angles to an earth station.

Boresight. : An imaginary line passing through the optical centre and focus of a antenna sub-system

Boring Bar (Cuffer Bar): A combination tool holder and shank.

Boring Mills: A Boring Mill is a machine tool that is designed primarily for boring. Boring describes a process that is used to open up machined hole to a finished size with a single point cutting tool. Boring Mills are typically used to produce highly accurate diameters on machined components and are especially appropriate for large diametric features.

Boron (Chemical Symbol B): Element N. 5 of the periodic system. Atomic weight 10.82. It is gray in color, ignites at about 1112 (degrees) F. and burns with a brilliant green flame, but its melting point in a non oxidizing atmosphere is about 4000 (degrees) F. Boron is used in steel in minute quantities for one purpose only to increase the hardenability as in case hardening and to increase strength and hardness penetration.

Boron (B): A chemical element, atomic number 5, semi-metallic in nature, used as a dopant to make p-semiconductor layers.

Boron Steels: The addition of boron in the range 0.0005 0.005% to certain steels increases the hardenability. A range of boron steels is now listed in the current BS 970 and are widely used for the production of cold headed fastenings.

boson : boson an integral spin particle to which Bose-Einstien statistics apply. Such particles do not follow the Pauli exclusion principle. Photons, pions, alpha particles, and nuclei of even mass numbers are examples of bosons.

Boss: A projection or an enlarged section of a casting through which a hole may be machine.

Bottle Top Mold: Ingot mold, with the top constricted; used in the manufacture of capped steel, the metal in the constriction being covered with a cap fitting into the bottle neck, which stops rimming action by trapping escaping gases.

Bottled gas: See Liquefied petroleum gases.

Bottled gas, LPG, or propane: Any fuel gas supplied to a building in liquid form, such as liquefied petroleum gas, propane, or butane. It is usually delivered by tank truck and stored near the building in a tank or cylinder until used.

Bottom ash: Residue mainly from the coal burning process that falls to the bottom of the boiler for removal and disposal.

Bottom Die: The stationary half die.

Bottom Roll: Submerged roll in the pot used to keep the strip submerged in the pot.

Bottom Up: Reversing the wrap of a coil putting the top surface on the bottom.

Bottom-hole contribution: A payment (either in cash or in acreage) that is required by agreement when a test well is drilled to a specified depth regardless of the outcome of the

well and that is made in exchange for well and evaluation data.

Bottoming cycle: A waste-heat recovery boiler recaptures the unused energy and uses it to produce steam to drive a steam turbine generator to produce electricity.

Boule: A sausage-shaped synthetic single-crystal mass grown in a special furnace, pulled and turned at a rate necessary to maintain the single-crystal structure during growth.

bound mode : bound mode a type of mode of limited spatial extension. Open waveguides can support, apart from a continuous spectrum, also a few modes, which do not extend up to infinity since they decay exponentially outside of a certain region. In an optical waveguide this is a mode whose field decays monotonically in the direction transverse to propagation and which does not lose power to radiation. Bound modes can also be interpreted in terms of guided rays and total internal reflection. Note: Except in a monomode fiber, the power in bound modes is predominantly contained in the core of the fiber. See also continuous spectrum.

boundary : boundary a curve that separates two sets of points.

boundary scan test : boundary scan test applying scan design concepts to control/observe values of signal pins of IC components by providing a dedicated boundary-scan register cell for each signal I/O pin.

boundary bus : boundary bus one of a set of buses which define the boundary between the portion of a power system to be analyzed and the rest of the system. Boundary buses are connected to both the internal and external systems.

boundary condition : boundary condition satisfied by a function at the boundary of its interval of definition. They are generally distinguished in hard or soft also called Neumann (the normal derivative of the function is equal to zero) or Dirichlet (the function itself is equal to zero).

boundary layer : boundary layer a method of smoothing out a discontinuous controller or a sliding

Boundary protection device (1). : Any device placed at the edge of a network designed to perform one or more barrier functions (bf) to control the nature of interconnection between domains, including what are colloquially referred to as “firewalls”, multi-level secure (mls) / multi security level (msl) devices, as man-in-the-loop-sanction security release control tools (srct) and one-way regulators. (uk)

Boundary protection device (2). : A controlled and continuously managed device that mediates all information flow and provides security services at the security boundary between a trusted system and another system. Examples: firewall, encryption device, guard, proxy server.(nato)

Boundary protection service (bps). : A mandatory capability, which is to be established between networks and at national boundaries to protect messaging systems by accepting or rejecting messages or attachments in accordance with national policy.

boundary scan : boundary scan a technique for applying scan design concepts to control/observe values of the signal pins of IC components by providing a dedicated boundary-scan register cell for each signal I/O pin.

boundary scan interface : boundary scan interface used to shift in test pattern or test instruction and to shift out test responses in the test mode. Boundary scan interface comprises shift-in, shift-out, clock, reset, and test select mode signals.

boundary scan path : boundary scan path a technique that uses a standard serial test interface to assure easy access to chip or board test facilities such as test registers (in an external or internal scan paths) or local BIST. In particular it assures complete controllability and observability of all chip pins via shift in and shift out operations.

boundary value problem : boundary value problem in which the unknown is a solution to a partial differential equation and is subject to a set of boundary conditions on the problem domain.

boundary-element method (BEM) : boundary-element method (BEM) numerical method (integral equation technique) well suited to problems involving structures in which the dielectric constant does not vary with space.

bounds fault : bounds fault an error that holds the mapper when it detects the offset requested into an object exceeds the object's size.

Bow: The lateral deviation from straightness

Box: Interanal (female) threaded end.

Box: A wiring device that is used to contain wire terminations where they connect to other wires, switches, or outlets.

Box Annealing: A process of annealing a ferrous alloy in a closed metal container, with or without packing materials, in order to minimize the effects of oxidation. The charge is normally heated slowly to a temperature below the transformation range, but occasionally above or within it, and then is slowly cooled.

Box Mounted Dimmers/Fan Speed Control: Any dimmer or fan speed control that mounts in or on a NEMA standard switch box.

Boys camera : Boys camera a rotating camera used to photograph lightning and establish the multiplicity of individual flashes in a lightning stroke.

bp: The abbreviation for boiling point.

bps, bits per second. : A measure of speed or data rate. Often combined with metric prefixes as in kbps for thousands of bits per seconds (k for kilo-), in mbps for millions of bits per second (m for mega-) and gbps for billions of bits per second.

Bragg angle : Bragg angle the required angle of incidence for light into a Bragg cell to produce a single diffraction order of maximum intensity. The sine of the Bragg angle is approximately the light wavelength divided by the grating.

Bragg cell : Bragg cell an acousto-optic cell designed where only a single diffraction order is produced, generally by making the acoustic column thick along the light propagation direction.

Bragg cell radiometer : Bragg cell radiometer acousto-optic spectrum analyzer in the Bragg mode, but with generally much longer photo-integration times such as via a long integration time photo detector array.

Bragg diffraction: Bragg diffraction the interaction of light with a thick grating or acoustic wave, producing a single diffraction order with maximum intensity.

Bragg diffraction regime : Bragg diffraction regime the acoustic beam width is sufficiently wide to produce only two diffracted beams, i.e., the undiffracted main beam (also called the zero order or DC beam), and the principal diffracted beam.

Bragg scattering : Bragg scattering the scattering of light from a periodically varying refractive index variation in a thick medium, so-called by analogy to the Bragg scattering of

X-rays from the atomic arrays in a crystal. For instance, an acousto-optic modulator can be said to operate in the Bragg regime or alternatively in the Raman–Nath regime.

Braid: A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.

Braid Angle: A term used in the determination of the braid configuration relating to the angle of the braided filaments or fibres in relationship to the axis of the cable core being braided.

Braid Carrier: A spool or bobbin on a braiding machine holding one group of strands or filaments consisting of a specified number of ends. The carrier revolves during the braiding operation.

Braid Ends: In a braid the given number of strands used to make up one carrier. The strands are wound side by side on the carrier bobbin and lay parallel in the finished braid.

Braider: A machine used to apply a woven fibrous or metallic braid over a cable.

brake horse power bhp, BHP: Horse power of an engine measured by the degree of resistance offered by a brake. Represents the useful power that the machine can develop.

Brake Press Bending: An operation which produces various degree bends when fabricating parts from steel.

Brake Wire: Wire used in mobile-home, travel and truck trailers to supply current to the electrical braking system.

braking : braking operating condition in an electric motor in which the torque developed between the stator and rotor coils opposes the direction of rotation of the rotor. Typical braking methods in DC machines include “plugging” in which the polarity of either the field or the armature coil, but not both, is reversed while the rotor is turning, “dynamic braking” in which generator action in the armature is used to dissipate rotor energy through a braking resistor, and “regenerative braking” in which generator action in the rotor is used to dissipate rotor energy by returning electric power to the power source as the rotor slows. Typical braking methods in AC machines include switching of the phase sequence of the supply voltage, dynamic braking through the armature coils, and varying the frequency of the AC supply voltage. See also phase sequence.

braking resistor : braking resistor resistive elements which can be switched into the electrical system to create additional load in the event of a transient disturbance, thus limiting the generator rotor acceleration such that the system can more readily return to synchronism.

Brale: A diamond penetrator, conical in shape, used with a Rockwell hardness tester for hard metals.

branch: An element in a circuit connecting two nodes.

branch address : branch address the address of the instruction to be executed after a branch instruction if the conditions of the branch are satisfied. Also called a branch target address.

Branch Circuit: A circuit that supplies a number of outlets for lights, appliances, equipment etc.

branch circuit : branch circuit the three components of an electrical circuit are source, load, and interconnecting circuit conductors. A branch circuit is an electrical circuit designed to deliver power to the lowest-order load(s) served on a facility. It includes the overcurrent device, circuit conductors, and the load itself.

branch current : branch current the current in a branch of a circuit.

branch history table : branch history table a table that holds the branch addresses of pre-

viously executed branch instructions. Used to predict the outcome of branch instructions when these instructions are next encountered. Also more accurately called a branch target buffer.

branch instruction : branch instruction an instruction is used to modify the instruction execution sequence of the CPU. The transfer of control to an-other sequence of instructions may be uncon-conditional or conditional based on the result of a previous instruction. In the latter case, if the condition is not satisfied, the transfer of control will be to the next instruction in se-quence. It is equivalent to a jump instruction, although the range of the transfer may be lim-ited in a branch instruction compared to the jump. See also jump instruction.

branch line coupler : branch line coupler of four transmission lines, each of 90 electri-cal length, arranged in a cascaded configura-tion with the end of the last transmission line section connected to the beginning of the first transmission line to form a closed path. The input, coupled, direct, and isolated ports are located at the connection point of one trans-mission line with the next one.

branch penalty : branch penalty the delay in a pipeline after a branch instruction when instructions in the pipeline must be cleared from the pipeline and other instructions fetched. Oc-curs because instructions are fetched into the pipeline one after the other and before the outcome of branch instructions are known.

branch relation : branch relation the relationship between voltage and current for electrical compo-nents. Common branch relations are Ohm's Law and the lumped equations for capacitors and inductors. More complex branch rela-tionships would be transistor models.

branch target buffer (BTB) : branch target buffer (BTB) a buffer that is used to hold the history of previous branch paths taken during the execution of individ-ual branch instructions. The BTB is used to improve prediction of the correct branch path whenever a branch instruction is en-counterred.

Branded product: A refined petroleum product sold by a refiner with the understanding that the purchaser has the right to resell the product under a trademark, trade name, service mark, or other identifying symbol or names owned by such refiner.

Brass: An alloy that is 70% copper,30% zinc. One of the most widely used of the copper zinc alloys; malleable and ductile; excellent cold working but poor hot working and machining properties; excellent for soft soldering; good for silver alloy brazing or oxyacetylene welding, but fair for resistance or carbon arc welding. Used for drawn cartridges, tubes, eyelets machine items and snap fasteners.

Brass Plating: Brass Plating is a process in which brass alloy is deposited on the surface of another metal via electroplating. A voltage potential is applied to a brass anode and a suitable metal cathode submerged in an electrolytic solution. Metal ions from the brass anode dissolve in the electrolytic solution and plate the cathode.

Brass Rigid Waveguides: A Brass Rigid Waveguide is typically used to guide microwaves for telecommunication applications. Brass is chosen for its low bulk resistivity and relative affordability.

Brass Screws: Brass Screws are used as fasteners in corrosive environments as an alternative to steel screws.

Brasses: Copper base alloys in which zinc is the principal alloying element. Brass is harder and mechanically stronger than either of its alloying elements copper or zinc. It is formable and ductile; develops high tensile strength with cold working and is not heat treatable.

Brazed Tube: Brazing Alloys, also known as fillers, are used to join materials together during the brazing process. Selection of an appropriate brazing alloy depends on its wetting properties with respect to the base metals being joined, its melting point, and its structural properties. Brazing alloys are available in a variety of forms including rod, wire, and paste.

Brazing Fluxes: Brazing Flux is used to suppress oxidation of the brazing filler when it is heated to its flow temperature. This is critical for proper adhesion for the filler to the base metal.

breadboard : breadboard a preliminary, experimental circuit, board, device or group of them. It is built only to investigate, test, analyze, evaluate, validate, determine feasibility, develop technical data, and to demonstrate the technical principles related to a concept, device, circuit, equipment, or system. It is designed in a rough experimental form, only for laboratory use, and without regard to final physical appearance of a product.

breadth-first search : breadth-first search tree or trellis search where processing is performed breadth first, i.e., the processing for the entire breadth of the tree/trellis is completed before starting the processing for the next step forward.

break frequency : break frequency the critical frequency in a frequency - dependent response: especially that frequency which may separate two modes of the response, e.g. the frequency that defines where the low frequency region ends and the midband response begins.

Break Magnetic: A friction brake which is controlled by electromagnetic means.

Break of a Circuit-Opening Device: The minimum distance between the stationary and movable contacts when these contacts are in the open position.

Break Test (For Tempered Steel): A method of testing hardened and tempered high carbon spring steel strip wherein the specimen is held and bent across the grain in a vice like calibrated testing machine. Pressure is applied until the metal fractures at which point a reading is taken and compared with a standard chart of brake limitations for various thickness ranges.

Break.: A space (or spacing) condition that exists longer than one character time (typical length is 110 milliseconds). Often used by a receiving terminal to interrupt (break) the sending device's transmission, to request disconnection, or to terminate computer output.

Breakage: Cracks or separation of the steel.

breakdown: The occurrence of a large current between electrodes separated by a dielectric at a critical voltage.

breakdown : breakdown as applied to insulation (including air), the failure of an insulator or insulating region to prevent conduction, typically because of high voltage.

breakdown torque : breakdown torque maximum torque that can be developed by a motor operating at rated voltage and frequency without experiencing a significant and abrupt change in speed. Sometimes also called the stall torque or pull-out torque.

Breakdown Voltage: Threshold voltage at which circuit components begin to be damaged. See also "working voltage."

Breakdown Voltage: The voltage at which a dielectric material fails.

Breakdown Voltage: The voltage at which an insulator or dielectric ruptures, or at which ionization and conduction take place in a gas or vapor.

Breakdown Voltage: The minimum voltage of an insulator which cause that part of insulator to become conductor.

Breakdown Voltage: The voltage at which the insulation between two conductors is destroyed.

breakdown voltage : breakdown voltage voltage across a device at which the current begins to dramatically deviate and increase relative to the current previously observed at lower voltages close to the breakdown volt-age. This effect is attributed to avalanche or zener breakdown. It is usually specified at a predetermined value of current.

Breaker: See "Circuit breaker".

breaker: Short for circuit breaker.

Breaker: Breaker may be automatic or manual which protect the system to damage from any type of overload and short circuit. MCB is example.

Break-even cutoff grade: The lowest grade of material that can be mined and processed considering all applicable costs, without incurring a loss or gaining a profit.

Breakout: An accident caused by the failure of the walls of the hearth of the furnace resulting in liquid iron or slag (or both) flowing uncontrolled out of the blast furnace.

Breakout: A term used to define a wire or group of wires in a multi-conductor configuration which terminate somewhere other than at the end of the configuration.

Breakout box. : A device that provides access for testing of circuits in a cable or connector.

breakpoint : breakpoint (1) an instruction address at which a debugger is instructed to suspend the execution of a program.(2) a critical point in a program, at which execution can be conditionally stopped to allow examination if the program variables contain the correct values and/or other ma-nipulation of data. Breakpoint techniques are often used in modern debuggers, which provide nice user interfaces to deal with them.

breakpoint instruction : breakpoint instruction struction provided through hardware support in most microprocessors. When a program hits a break point, specified actions occur that save the state of the program, and then switch to another program that allows the user to examine the stored state. The user can suspend the execution of a program, examine the registers, stack, and memory, and then resume the program's execution, which is very help-ful in a program's debugging.

Breakthrough: A device which permits air to move in and out of a container or component to maintain atmospheric pressure.

breath noise : breath noise the noise that is commonly produced when talking at the microphone. It is due to breathing.

Breather: In extrusion: the part of an extrusion ?bridge die? that supports a void forming mandrel. During extrusion, the metal divides and flows around the bridge, reuniting as it is extruded through the die orifice. The resulting weld line can be detected upon microscopic examination, but the extrusion appears functionally and visually seamless.

Breccia: A coarse-grained clastic rock, composed of angular broken rock fragments held together by a mineral cement or in a fine-grained matrix.

Breed: To form fissile nuclei, usually as a result of neutron capture, possibly followed by radioactive decay.

Breeder reactor: A reactor that both produces and consumes fissionable fuel, especially one that creates more fuel than it consumes. The new fissionable material is created by a process known as breeding, in which neutrons from fission are captured in fertile materials.

breeder reactor: A nuclear reactor which produces the same kind of fissile material as it

burns. For example, a reactor using plutonium as a fuel can produce more plutonium than it uses by conversion of Uranium-238.

Breeder reactor: see Fast Breeder Reactor and Fast Neutron Reactor.

breeder reactor : breeder reactor a nuclear reactor in which a non-fissile isotopes are converted to fissile isotopes by irradiation. Ideally, such a reactor produces more fissile products than it consumes.

Breeze: The fine screenings from crushed coke. Usually breeze will pass through a 1/2-inch or 3/4-inch screen opening. It is most often used as a fuel source in the process of agglomerating iron ore.

Bremsstrahlung : Bremsstrahlung electromagnetic radiation, usually in the X-ray region of the spectrum produced by electrons in a collision with the nucleus of an atom.

Bremsstrahlung radiation is produced in regions of high electric potential such as areas surrounding electro-static septa and RF cavities. Bremsstrahlung is German for breaking.

Brewster angle : Brewster angle the angle from normal at which there is no reflection at a planar interface between two media. The Brewster angles for perpendicular and parallel polarizations are different. For nonmagnetic media, in which the relative permeability is unity, the Brewster angle for perpendicular polarization does not exist.

Brewster mode : Brewster mode a bound radiative surface mode when one of the media is a plasma medium and has a positive dielectric function.

Brewster window : Brewster window transmission window oriented at Brewster's angle with respect to an incident light beam; light polarized in the plane of incidence experiences no reflection.

Bridge: A network device operating at the first two layers of the OSI model with filtering and forwarding capabilities.

Bridge: See Wheatstone bridge

bridge : bridge a simple device that connects two or more physical local-area networks (LANs). It forwards packets of data from one LAN segment to another without changing it, and the transfer is based on physical addresses only. The separate LAN segments bridged this way must use the same protocol.

bridge balance condition : bridge balance condition relationship between bridge circuit components when the current in the balance indicator is absent. Most of the technically useful bridges include a regular connection (series, parallel, series-parallel, or parallel-series) of two two-ports. The condition of balance can be reformulated in terms of two-port parameters, so that depending on structure, the sum of two forward transfer parameters or the sum of one forward and another backward transfer parameter is equal to zero.

Bridge Battery: It is internal battery backup of any electronic machine.

bridge calibration : bridge calibration used in bridge transducer applications. It is achieved connecting two auxiliary circuits to the bridge. One circuit including two resistors and a potentiometer is connected in parallel to the bridge power supply diagonal, and the potentiometer tap and one end of detector are connected to the same bridge node. Sliding the tap, one can eliminate the bridge offset. Another circuit, usually including a constant and a variable resistor, is connected in series with power supply. This circuit allows one to change the voltage applied to the bridge, and to establish the correspondence between the maximal deflection of the detector and maximum of the physical variable applied to the bridge

resistors playing the role of active gauges.

bridge rectifier: A full-wave rectifier where the diodes are connected in a bridge circuit (two of them are always conducting at any given time). This allows the current to the load during both the positive and negative alternation of the supply voltage. This is the most common type of rectifier circuit to produce a unidirectional voltage for an alternating input.

bridge rectifier : bridge rectifier a full-wave rectifier to convert ac to dc, that contains four rectifying elements for single phase, and six elements for three phase, connected as the arm of a bridge circuit.

Bridge Rectifiers: A bridge rectifier converts AC current to pulsating DC current using an arrangement of diodes. In the case of a single phase wave, the bridge rectifier consists of 4 diodes. Polyphase waves can also be rectified with a bridge rectifier.

bridge sensitivity : bridge sensitivity the ratio of the variation of the voltage or the current through the detector to the variation of the component that causes the disbalance of the bridge circuit.

Bridge. : The interconnection between 2 networks using the same communications method, the same kind of transmission medium, and the same addressing structure; also the equipment used in such an interconnection. Bridges function at the data link layer of the osi model.

Contrast with gateway.

bridging : bridging using bridges for local-area networks.

Bridle: A set of rolls used to maintain tension on the strip as it goes through the line.

Bridle Rolls: A series of neoprene or steel rolls.

Bridle Snubber: The roll above the bridle rolls used to thread the strip. Also is used to steer the strip through the bridle.

Bridle Unit: A three roll cluster used to control line tension at strategic locations on the line.

Bridling: The cold working of dead soft annealed strip metal immediately prior to a forming, bending, or drawing operation. A process designed to prevent the formulation of Luder's lines. Caution Bridled metal should be used promptly and not permitted to (of itself) return to its pre bridled condition.

Bright Annealed Wire: Steel wire bright drawn and annealed in controlled non oxidizing atmosphere so that surface oxidation is reduced to a minimum and the surface remains relatively bright.

Bright Annealing: A process carried out usually in a controlled furnace atmosphere, so surface does not oxidize, remaining bright.

Bright Annealing 2: The process of annealing in a protective atmosphere so as to prevent discoloration of the bright surface desired.

Bright Basic Wire: Bright steel wire, slightly softer than Bright Bessemer Wire. Used for round head wood screws, bolts and rivets, electric welded chain, etc.

Bright Bessemer Wire: Stiff bright wire of hard temper. Normally wire is drawn down to size without annealing.

Bright Dipping: Chemical polishing of aluminum, often by treatment with a mixture of nitric acid and phosphoric acid, yielding a mirror shiny (specular) highly reflective surface. It is almost always followed by anodizing to protect the surface and provide some choice of color.

Bright Drawing: The process of drawing hot rolled steel through a die to impart close dimensional tolerances, a bright scale free surface and improved mechanical properties. The

product is termed bright steel.

brightness: brightness the perceived luminance or apparent intensity of light. This is often different from the actual (physical) luminance, as demonstrated by brightness constancy, Mach band, and simultaneous contrast.

brightness: Brightness is the quotient of the luminous intensity of a small element of the source and the area of the element projected on to a plane perpendicular to the given direction. [Unit candela per unit area or Cd/m²]

Brightness: The freedom of any luminance source to visual attribute of visual perceptions.

brightness constancy : brightness constancy the perception that an object has the same brightness despite large changes in its illumination. Thus a piece of paper appears to be approximately as white in moonlight as in sunlight, even though the illumination from the sun may be one million times greater than that from the moon. See also brightness, human visual system (HVS), illumination, simultaneous contrast.

Brillouin flow : Brillouin flow a stream of electron beam emitted from an electron gun that is not exposed to a focusing magnetic field.

Brillouin laser : Brillouin laser acoustic maser in which the amplification mechanism is considered to be Brillouin scattering.

Brine : A saltwater solution for quenching or cooling when heat treating steel.

Brine Pumps: A Brine Pump refers to a pump used to remove water in a boiler tank. It often works in conjunction with a feed pump, where the feed pump supplies fresh water to the boiler tank while the brine pump removes an equal amount of water from the tank. The brine pump is located in an area of the tank so that it draws from water with elevated dissolved solids; the goal being to purge dissolved solids from the boiler system.

Brinell Hardness Number: A common standard method of measuring the hardness of materials. The smooth surface of the metal is subjected to indentation by a hardened steel ball under pressure. The diameter of the indentation, in the material surface, is then measured by a microscope and the hardness value is read from a chart or determined by a prescribed formula.

Brinell Hardness Test: Method of determining the hardness of materials; involves impressing a hardened ball of specified diameter into the material surface at a known pressure (10 mm ball, 500 kg load for aluminum alloys). The Brinell hardness number results from calculations involving the load and the spherical area of the ball impression. Direct reading testing are generally used for routine inspection of forgings, and as a heat treat control function.

Brinell Testing Machine: A Brinell Testing Machine is used to measure the hardness of a material. It uses a round ball to indent the surface of the material with a constant force. The depth of the indentation is correlated to a Brinell Hardness Number (BHN) which is a comparative measure of material hardness. The typical Brinell test uses a 10mm steel ball and 29kN of force. For soft materials, less force is used; for harder materials, a tungsten carbide indenter is used.

Briquettes: are made from compressed coal dust, with or without a binding agent such as asphalt.

Brite: 1) Regular galvanize coating (not minimized spangle or JP). 2) Rolls that have no grit; smooth finish on surface of steel.

British thermal unit: The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

British Thermal Unit: (BTU) a heat unit equal to the amount of heat required to raise one pound of water one degree Fahrenheit.

British thermal unit (Btu): The amount of heat energy required to raise the temperature of one pound of water from 60 degrees F to 61 degrees F at one atmosphere pressure.

british thermal unit BTU: Quantity of heat required to raise the temperature of 1 pound of water through 1 °F. It is equal to 1054 joule or 251.98 calories.

Brittle Fracture: Fracture with little or no plastic deformation.

Brittle Inter Metallic Layer: An iron zinc alloy layer formed between the steel substrate and the free zinc of galvanized coatings.

Broach: A long, tapered cutting tool with serrations which, when forced through a hole or across a surface, cuts a desired shape or size.

Broadband: Referring to a technology in which a signal shares the bandwidth of a medium.

Broadband: The wide bandwidth data transmission which is capable of transporting the multiple signals and traffic.

broadband : broadband a service or system requiring transmission channels capable of supporting bit rates greater than 2 Mbit/s.

Broadband (1) : (in general) communications channel having a bandwidth greater than a voice-grade channel and potentially capable of much higher transmission rates; also called wideband.

Broadband (2) : (in lan technology) a system in which multiple channels access a medium (usually coaxial cable) that has a large bandwidth (50 mbps is typical) using radiofrequency modems.

broadband communications : The result of utilities forming partnerships to offer consumers "one-stop-shopping " for energy-related and high-tech telecommunications services.

Broadband ISDN (B-ISDN): ISDN with a high data rate based upon cell-relay delivery.

broadband system : broadband system a broadband communication system is one that employs a high data transmission rate. In radio terminology it implies that the system occupies a wide radio bandwidth.

broadcast : broadcast (1) the transfer of data to multiple receiver units simultaneously rather than to just one other subsystem. (2) a bus-write operation intended to be recognized by more than one attached device.

Broadcast (1) : Transmission of a message intended for general reception rather than for a specific station.

Broadcast (2): (in lan technology) a transmission method used in bus topology networks that sends all messages to all stations even though the messages are addressed to specific stations.

Broadcast (3): A method of transmitting messages on predetermined schedules, when, normally, no acknowledgement for the message is required.

Broadcast control authority. : The authority under whose control a specific broadcast is operated. The bca directs the implementation of an approved broadcast and provides direction and guidance concerning its employment, configuration and content. The bca may control the broadcast completely or assign certain responsibilities for operation to a subordinate

command.

Broadcast control station (bcs). : The station that technically controls the broadcast to ensure that all associated circuits are properly aligned in accordance with previously agreed upon configurations or as directed by the bca or other competent authority.

broadcast radiating station (brs). : The station responsible for radiating a broadcast signal supplied by the bcs.

Broadcast/unknown server (BUS): A server connected to an ATM switch that can multicast and broadcast frames.

Broadcasting: Transmission of a message to all nodes in a network.

broadcasting : broadcasting sending a message to mul-tiple receivers.

broadside: broadside when the pattern factor is maximum in the H plane (for a dipole antenna along the z axis this is the plane where $\theta=90$ degrees).

broadside array : broadside array an array where the main beam of the array is directed perpendicular to the array axis. In many applications it is desirable to have the maximum radiation of an array directed normal to the axis of the array.

broker : A retail agent who buys and sells power. The agent may also aggregate consumers and arrange for transmission and other ancillary services as needed.

Bronze: An alloy containing 90% copper and 10% tin. Used for screws, wire, hardware, wear plates, bushings and springs; it is somewhat stronger than copper and brass and has equal or better ductility.

Brouter (bridge/router): A device that functions as both a bridge and a router.

Brownian motion : Brownian motion a stochastic process with independent and stationary increments. The derivative of such a process is a white noise process. A Brownian motion process X_t is the solution to a stochastic differential equation of the form

Brownout: Refers to a reduction of voltage on the system. This dims the lights as a means of conserving energy.

brownout: A long duration reduction in the voltage of the ac supply without complete loss of power. Brownouts are usually caused by heavy usage during peak hours and sometimes may even be planned as an energy conservation strategy.

Brownout: it is controlled drop in electricity in power supply systems. It is used in emergency situations for limited time period.

Brownout: Utility supply voltage dips below its nominal supply voltage.

brownout : brownout an intentional lowering of util-ity voltage to reduce loading on the system.

brownout : A controlled power reduction in which the utility decreases the voltage on the power lines, so consumers receive lower quality electricity. Brownouts can be used if total power demand exceeds the maximum available supply.

Browser: An application program that displays a WWW documents. A browser usually uses other Internet services to access the document.

Bruise: A mark transferred to the strip surface from a defective process roll. Similar to dent or punchmark.

Brush: A conductive block used to make sliding contact with an armature.

brush : brush a conductor, usually carbon or a carbon-copper mixture, that makes sliding electrical contact to the rotor of an electrical machine. Brushes are used with sliprings on a

synchronous machine to supply the DC field and are used with a commutator on a DC machine.

brush rigging : brush rigging the components used to hold the brushes of a rotating machine in place, and to insure proper brush tension is applied.

brush tension : brush tension the force required on the brushes of a rotating machine to insure proper contact between the brush and the commutator or slipring. Proper brush tension is usually provided by springs, and is specified in the manufacturer's technical manual of the machine.

Brushless Ac Motor: A brushless AC motor is also known as an induction motor because the motor rotor is driven by electromagnetic induction rather than by mechanical contact. In a brushless motor, the alternating current is used to create a magnetic flux around the motor stator. This magnetic flux then induces the motor of the rotor unit. The absence of brushes reduces the mechanical friction in the motor and greatly increases the motor efficiency.

Brushless Servo System: A brushless servo system combines a servo drive, brushless DC motor, and a motor feedback system in order to drive and control mechanisms such as automation devices, rotary machines, or robotics. The integration of the motor feedback allows the servo system to account for unexpected disturbances and to improve the overall accuracy of the system.

BSC: Bare soft copper - uncoated annealed copper.

Bsc, bisync, binary synchronous communications. : A byte or character-oriented IBM communications protocol which has become an industry standard. It uses a defined set of control characters and sequences for synchronized transmission of binary-coded data between stations in a data communications system.

B-spline : B-spline the shortest cubic spline consisting of different three-degree polynomial on four intervals; it can be obtained by convolving four box functions.

Btam, basic telecommunications access method. : An IBM software routine; the basic access method for 3270 data communications control.

BTC: Buttress threaded and coupled

Btu: The abbreviation for British Thermal Unit(s).

Btu conversion factor: A factor for converting energy data between one unit of measurement and British thermal units (Btu). Btu conversion factors are generally used to convert energy data from physical units of measure (such as barrels, cubic feet, or short tons) into the energy-equivalent measure of Btu.

(See <http://www.eia.gov/totalenergy/data/monthly/pdf/sec13.pdf> for further information on Btu conversion factors.)

Btu per cubic foot: The total heating value, expressed in Btu, produced by the combustion, at constant pressure, of the amount of the gas that would occupy a volume of 1 cubic foot at a temperature of 60 degrees F if saturated with water vapor and under a pressure equivalent to that of 30 inches of mercury at 32 degrees F and under standard gravitational force (980.665 cm. per sec. squared) with air of the same temperature and pressure as the gas, when the products of combustion are cooled to the initial temperature of gas and air when the water formed by combustion is condensed to the liquid state. (Sometimes called gross heating value or total heating value.)

BTX: The acronym for the commercial petroleum aromatics-- benzene, toluene, and xylene.

bubble chamber : bubble chamber an instrument for rendering visible the tracks of ionizing particles. It is characterized by a vessel filled with a superheated transparent liquid, commonly hydrogen or deuterium. The passage of an ionizing particle through this liquid is marked by the appearance of a series of bubbles along the particle trajectory. If the liquid is subjected to a magnetic field, as is usually the case, the charged particle trajectories will be curved, the curvature providing information about the particles' charge and momentum.

BUC: block upconverter

Buck: The act of lowering the voltage.

buck converter : buck converter a transistor is switched by PWM trigger pulses and a diode provides a current continuation path when the transistor is off, thus the input voltage is chopped. A lowpass LC filter is used to attenuate the switching ripple at the output. The input current to a basic buck converter is discontinuous; therefore, in many applications an LC prefilter is applied to reduce EMI. The output voltage v_o is related to the input voltage v_i by $v_o = D v_i$ and it can be controlled by varying the duty ratio d . Isolated versions of a buck converter include forward, push-pull, halfbridge, and bridge converters. Also called chopper or step-down converter.

Buck-Boost: A DC to DC converter that has an output voltage magnitude greater or less than the input voltage magnitude.

Bucket: An aerial lift truck used to lift men high enough to work on overhead lines.

bucket : bucket a stable phase space area where the particle beam may be captured and accelerated. An RF bucket is the stable region in longitudinal phase space. The bucket width gives the maximum phase error or timing error at the RF cavity, which a particle may have, and still complete the whole acceleration cycle. The bucket height is the corresponding limit on momentum error.

Bucket Truck: A basket or platform that supports one or more linemen attached to a boom of a truck.

Bucket Truck: A carrier truck having bucket

bucket truck : bucket truck a motor truck equipped with a shell or bucket at the end of a hydraulically-operated insulated arm. A line worker stands in the bucket and is thus raised to gain access to overhead conductors.

Budget plan: An agreement between the household and the utility company or fuel supplier that allows the household to pay the same amount for fuel for each month for a number of months.

Buff: To polish A smooth finish of high luster with a cloth or fabric wheel to which a compound has been added.

Buffer: Memory set aside for temporary storage.

buffer : buffer a temporary data storage area in memory that compensates for the different speeds at which different elements are transferred within a system. Buffers are used when data transfer rates and/or data processing rates between sender and receiver vary, for instance, a printer buffer, which is necessary because the computer sends data to the

buffer register: The register that holds digital data temporarily.

Buffer. : A temporary storage device used to compensate for a difference in either the rate of data flow or the time of occurrence of events in transmissions from one device to another.

buffering : buffering (1) the process of moving data into or out of buffers or to use buffers

to deal with input/output from devices. See also buffer, buffered input/output.

bug : bug (1) an error in a programmed implementation (may be either hardware or software). Bugs may refer to errors in correctness or performance. (2) a syntactical or logical error in a computer program. A name attributed to early computers and electronic testing.

Build Up Coil: A coil made by putting together two or more coils to make one max coil or one shippable coil.

Building Automation: Building Automation refers to the use of a central computerized control to monitor and regulate the operation of equipment inside a factory, plant, or commercial building.

building service entry: The point where commercial power enters the building.

Building shell (envelope) DSM program: A DSM program that promotes reduction of energy consumption through improvements to the building envelope. Includes installations of insulation, weather stripping, caulking, window film, and window replacement. (Also see DSM, Demand-Side Management Programs.)

Building shell conservation feature: A building feature designed to reduce energy loss or gain through the shell or envelope of the building. Data collected by EIA on the following specific building shell energy conservation features roof, ceiling, or wall insulation; storm windows or double- or triple-paned glass (multiple glazing); tinted or reflective glass or shading films; exterior or interior shadings or awnings; and weather stripping or caulking. (See Roof or Ceiling Insulation, Wall Insulation, Reflective or Shading Glass or Film, Storm Window or Triple-Paned Glass, Building Shell (Envelope), and Weather Stripping or Caulking.)

Building Wire: Conductors and cables used in commercial building construction.

Building Wire: The electrical wires used in building electrical fittings.

Building Wire: Wire used for light power in permanent installations utilizing 600 volts or less. Usually in an enclosure and which will not be exposed to outdoor environments.

Built-in electric units: An individual-resistance electric-heating unit that is permanently installed in the floors, walls, ceilings, or baseboards and is part of the electrical installation of the building. Electric-heating devices that are plugged into an electric socket or outlet are not considered built in. (Also see Heating Equipment.)

Builtup Plate: A pattern plate of suitable material, with the cope pattern mounted on or attached to one side; the drag pattern may be attached to the other side or to a separate mounting. See Matchplate

Bulb: The outer enclosure of a light source; usually glass or quartz.

Bulb: The light emitting device that is a combination of gas filled glass close tube having a metal filament

Bulb Envelope Lighting): The outer enclosure of a light source; usually glass or quartz.

bulb generator : bulb generator a free-standing generator contained in a streamlined, waterproof bulb-shaped enclosure and driven by a water-wheel resembling a ship's propeller on a shaft which extends from one end of the enclosure. They are used in tidal power installations.

Bulb Sing (Filament Hum): The audible noise which can come from an incandescent lamp controlled by a dimmer.

Bulk Bag Dischargers: Bulk bag dischargers are specialized industrial machines used to

handle bagged bulk material during production and distribution operations. The design of these machines vary widely dependent on the type and quantity of material being filled. Bulk bag dischargers are used to load, unload, tie, and remove bulk bags, among other operations. Dischargers are also referred to as unloaders and usually include a frame support and hoist mechanism, such as a crane, to allow for the support and movement of the bag.

Bulk Bag Filler: Bulk bag fillers are specialized industrial machines used to package material into bags during production and distribution operations. The design of these machines vary widely dependent on the type and quantity of material being filled. Bulk bag fillers often include the ability to easily install and support the bag, the ability to weight the contents of the bag, and the ability to densely pack and seal the bag and prepare it for distribution.

Bulk Density: The ratio of the weight of a material to its over all volume (including any inherent porosity).

Bulk Material Handling Equipment: Bulk material handling equipment encompasses a number of technologies used for movement, transport, and storage of bulk materials, including conveyors, bins, hoppers, pumps, and process control technologies.

Bulk Material Handling Systems: A bulk material handling system integrates bins, conveyors, and process controls to efficiently and safely sort, move and/or process bulk materials.

bulk power : bulk power a term inclusive of the gener-ation and transmission portions of the power system.

bulk power market : Wholesale purchases and sales of electricity.

bulk power supply : Commonly used interchangeably with wholesale power supply. In broader terms, it refers to the aggregate of electric generating plants, transmission lines, and related equipment.

Bulk power transactions: The wholesale sale, purchase, and interchange of electricity among electric utilities. Bulk power transactions are used by electric utilities for many different aspects of electric utility operations, from maintaining load to reducing costs.

Bulk sales: Wholesale sales of gasoline in individual transactions which exceed the size of a truckload.

bulk scattering : bulk scattering scattering at the volume of an inhomogeneous medium, generally also possessing rough boundaries. It is due to in-homogeneities in the refractive index.

Bulk station: A facility used primarily for the storage and/or marketing of petroleum products, which has a total bulk storage capacity of less than 50,000 barrels and receives its petroleum products by tank car or truck.

Bulk Storage Tanks: A bulk storage tank is used to hold bulk materials. They not only have to be structurally sound, but also chemically inert to the material being stored inside.

bulk substation : bulk substation a substation located on a high-voltage transmission line which sup-plies bulk power to a non-generating utility.

Bulk terminal: A facility used primarily for the storage and/or marketing of petroleum products, which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline.

Bulk Transfer Food Hoses: Bulk Transfer Food Hoses are used for the transfer of liquid foodstuffs. They are constructed of tasteless, odorless materials and can be subject to

approval by regulatory bodies such as the USA FDA.

Bull Gear: The large crank gear of a shaper.

Bull horn/loudhailer. : High power directional loudspeaker.

Bull Line: Heavy line used to pull wire or cable into a conduit or into an overhead configuration.

Bull Wheel: A reel device used to hold tension during the wire installation process.

Bull Wheel: A big wheel having provision for turning the rope like a lift.

Bulldozers: A Bulldozer is a tractor equipped with a large plate used to push rubble, dirt, or other materials. Generally, bulldozers use tracked wheels for improved traction.

Bullet Terminals: Bullet terminals are a method for connecting two wires together. The male end is shaped like a bullet and snaps into a corresponding female receiving end.

bump : bump a localized orbit displacement created by vertical or horizontal correction element dipoles used to steer beam through available aperture or around obstacles.

bunch : bunch a group of particles captured in a phase space bucket.

Bunch Wrap: Any number of conductor strands twisted together in one direction with the same lay length.

Bunched Stranding: A term applied to a number of wires twisted together in one direction in one operation without regard to their geometric arrangement.

bundle: bundle the practice of paralleling several conductors per phase in an overhead transmission line for the purpose of increasing ampacity and decreasing inductive reactance.

Bundle: Multiple cables used to form one phase of an overhead circuit.

Bundle: The collection of something or wrapped up together.

Bundle: More than one cable held in a single Grip.

bundle spacer : bundle spacer a rigid structure which is used to maintain the spacing of wires in a bundled conductor on an overhead electric power transmission line See bundle.

bundled services : bundled services utility services which are sold together, like power transmission and distribution services in non-deregulated electric utilities.

Bundled utility service (electric): A means of operation whereby energy, transmission, and distribution services, as well as ancillary and retail services, are provided by one entity.

Bunker fuels: Fuel supplied to ships and aircraft, both domestic and foreign, consisting primarily of residual and distillate fuel oil for ships and kerosene-based jet fuel for aircraft. The term "international bunker fuels" is used to denote the consumption of fuel for international transport activities. Note For the purposes of greenhouse gas emissions inventories, data on emissions from combustion of international bunker fuels are subtracted from national emissions totals. Historically, bunker fuels have meant only ship fuel.

BURD: Buried Urban Residential Distribution.

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Burden: Load imposed by an electronic or electrical device on the measured input circuit, expressed in voltamps.

Buried Urban Residential Distribution: Refers to the system of electric utility equipment installed below grade.

buried via : buried via a via connected to neither the primary side nor the secondary side of a multilayer packaging and interconnecting structure, i.e., it connects only internal layers.

Burn: 1) Process of cutting metal by a stream of fuel and oxygen, 2) to permanently damage

a metal or alloy by heating to cause either incipient melting or intergranular oxidation.

Burn days: The number of days the station could continue to operate by burning coal already on hand assuming no additional deliveries of coal and an average consumption rate.

Burn On Sand: Sand adhering to the surface of the casting that is extremely difficult to remove.

Burn Out: Firing a mold at a high temperature to remove pattern material residue.

Burnable poison: A neutron absorber included in the fuel which progressively disappears and compensates for the loss of reactivity as the fuel is consumed. Gadolinium is commonly used.

burndown : burndown breakage of an overhead electric power line due to heating from excess current.

Burner Ignition Units: A Burner Ignition Unit generates a spark which is used to ignite atomized fuel in an oil or gas burner system.

Burner Nozzles: A burner nozzle is used to atomize combustible fluid, such as heating oil, prior to ignition. Nozzles are designed to control the droplet size, rate and spray pattern.

burn-in : burn-in component testing where infant mortality failures (defective or weak parts) are screened out by testing at elevated volt-ages and temperatures for a specified length of time.

Burning: Heating a metal beyond the temperature limits allowable for the desired heat treatment, or beyond the point where serious oxidation or other detrimental action begins.

burning: (see combustion)

Burnishing: Smoothing surfaces through friction between the material and material such as hardened metal media.

Burnt: A definition applying to material which has been permanently damaged by over heating.

Burnt Rubber: Small or large black spots that generally show up on surface and are generally caused by pickling steel too hot.

Burnthrough: In shell molding, resin burned out too soon.

Burn-through range. : That range at which a radar target, until then masked by jamming, becomes detectable to the radar.

Burnup: Amount of thermal energy generated per unit mass of fuel, expressed as Gigawatt-Days Thermal per Metric Ton of Initial Heavy Metal (GWDT/MTIHM), rounded to the nearest gigawatt day.

Burnup: Measure of thermal energy released by nuclear fuel relative to its mass, typically Gigawatt days per tonne (GWd/tU).

burnup : burnup a measure (e.g., megawatt-days / ton) of the amount of energy extracted from each unit of fissile material invested in a nuclear reactor.

Burr: The very subtle ridge on the edge of strip steel left by cutting operations such as slitting, trimming, shearing, or blanking. For example, as a steel processor trims the sides of the sheet steel parallel or cuts a sheet of steel into strips, its edges will bend with the direction of the cut.

Burr Mashers: Devices used to remove build up on edge of strip after the slitting process.

Burst: Internal pressure at which a tube will yield often tested hydrostatically

Burst Dimming: this is the method of dimming of lamps by using pulse modulation

Burst error: Error in a data unit in which two or more bits have been altered.

Burst Mode: High-speed data acquisition mode in which data points are measured as quickly as possible then held for subsequent conversion. Helps reduce skew.

Burst Mode: Burst mode is used in photography in which continuous high speed photo shooting is done.

Burst Pressure: The level of pressure at which a component, pipe, tube, hose or other fluid passage will burst during application of internal pressure. Normally 2.5 to 4.0 times working pressure.

Burst Pressure: The maximum pressure that can be applied to a transducer without rupture of either the sensing element or the transducer case.

burst refresh : burst refresh in DRAM, carrying out all required refresh actions in one continuous sequence—a burst. See also distributed refresh.

burst transfer : burst transfer the sending of multiple related transmissions across an interconnect, with only one initialization sequence that takes place at the beginning of the burst.

burstiness factor : burstiness factor used in traffic description, the ratio of the peak bit rate to the average bit rate.

Bursty data: Data with varying instantaneous transmission rates.

Bus: An electrical conductor that serves as a common connection for two or more electrical circuits.

Bus: A conductor, which may be a solid bar or pipe, normally made of aluminum or copper, used to connect one or more circuits to a common interface. An example would be the bus used to connect a substation transformer to the outgoing circuits.

Bus: It is a communication system that transfers data between components inside a computer. It is full package of hardware and software.

Bus: A set of power supply leads or a conductor providing for multiple connections.

bus : bus (1) a data path connecting the different subsystems or modules within a computer system. A computer system will usually have more than one bus; each bus will be customized to fit the data transfer needs between the modules that it connects.

bus acquisition : bus acquisition the point at which a bus arbiter grants bus access to a specific requester.

bus arbiter : bus arbiter (1) the unit responsible for choosing which subsystem will be given control of the bus when two or more requests for control of the bus happen simultaneously. Some bus architectures, such as Ethernet, do not require a bus arbiter.

bus arbitration : bus arbitration the process of determining which competing bus master should be granted control of the bus. The act of choosing which subsystem will be given control of the bus when two or more requests for control of the bus happen simultaneously. The element that makes the decision is usually called the bus arbiter. See also bus priority.

bus architecture : bus architecture a computer system architecture in which one or more buses are used as the communication pathway between I/O device controllers, the CPU, and memory. See also channel architecture.

bus bandwidth : bus bandwidth (1) the data transfer rate in bits per second or bytes per second. In some instances the bandwidth average rate is given and in others the maximum rate is given. It is approximately equal to the width of the data bus, multiplied by the transfer rate

in bus data words per second. Thus a 32 bit data bus, transferring 25 million words per second (40 ns clock) has a bandwidth of 800 Mb/s.

Bus Bar: A heavy solid conductor at the main power source to which branch circuits are connected.

bus controller : bus controller the logic that coordinates the operation of a bus. A device connected to the bus will issue a bus request when it wishes to use the bus. The controller will arbitrate among the current requests and grant one requester access. The bus controller also monitors possible errors, such as use of an improper address, a device not releasing the bus, and control errors.

bus cycle : bus cycle the sequence of steps involved in a single bus operation. A complete bus cycle may require that several commands and acknowledgments are sent between the subsystems in addition to the actual data that is sent.

bus driver : bus driver the circuits that transmit a signal across a bus.

bus grant : bus grant an output signal from a processor indicating that the processor has relinquished control of the bus to a DMA device.

bus hierarchy : bus hierarchy a network of busses linked together (usually multiple smaller busses)

Bus Interface Unit: (BIU)The data circuit terminating equipment which provides access to a LAN. It may also provide packet assembly/dissassembly functions.

bus line : bus line one of the wires or conductors that constitute a bus. A bus line may be used for data, address, control, or timing.

bus locking : bus locking the action of retaining control of a bus after an operation which would normally release the bus at completion. In the manipulation of memory locks, a memory read must be followed by a write to the same location with a guarantee of no intervening operation. The bus must be locked from the initial read until after the update write to give an indivisible read/write to memory.

Bus Master: A type of a plug-in board or controller with the ability to read and write to devices on the computer bus.

Bus Master: Group of conductors that interconnect individual circuitry in a computer. Examples of PC buses include ISA,EISA and PCI.

bus master : bus master a bus device whose request is granted by the bus controller and thereby gains control of the bus for one or more cycles or transfers. The bus master may always reside with one subsystem, or may be transferred between subsystems, depending on the architecture of the bus control logic. See also bus controller, bus cycle.

bus owner : bus owner the entity that has exclusive access to a bus at a given time.

bus phase : bus phase a term applying especially to synchronous buses, controlled by a central clock, with alternating “address” and “data” transfers. A single transfer operation requires the two phases to transfer first the address and then the associated data. Bus arbitration may be overlapped with preceding operations.

bus priority : bus priority rules for deciding the precedence of devices in having bus requests honored.Devices issue requests on one of several bus request lines, each with a different bus priority. A high priority request then “wins” over a simultaneous request at a lower priority.

bus protocol : bus protocol (1) a set of rules that two parties use to communicate. the set of

rules that define precisely the bus signals that have to be asserted by the master and slave devices in each phase of a bus operation.

bus request : bus request an input signal to a processor that requests access to the bus; a hold signal. Competing bus requests are resolved by the bus controller. See also bus controller.

bus slave : bus slave a device that responds to a re-quest issued by the bus master. See also bus master.

bus snooping : bus snooping the action of monitoring all traffic on a bus, irrespective of the address. Bus snooping is required where there are several caches with the same or overlapping address ranges. Each cache must then “snoop” on the bus to check for writes to addresses it holds; conflicting addresses may be updated or may be purged from the cache.

Bus Support Insulators: These are porcelain or fiberglass insulators that serve to isolate the bus bar switches and other support structures and to prevent leakage current from flowing through the structure. These insulators are similar in function of other insulators used in substations and transmission poles and towers.

bus tenure : bus tenure the time for which a device has control of the bus, so locking out other requesters. In most buses, the bus priority applies only when a device completes its tenure; even a low priority device should keep its tenure as short as possible to avoid interference with higher priority devices. See also bus priority.

Bus topology: A network topology in which all computers are attached to a shared medium.

bus transaction : bus transaction the complete sequence of actions in gaining control of a bus, performing some action, and finally releasing the bus. See also bus cycle.

bus yard : bus yard an area of a generating station or substation in which bus bars and switches are located.

Bus, buss (1). : (in general) a data path shared by many devices such as the input/output bus in a computer.

Bus, buss (2). : (in lan technology) a linear network topology; contrast with ring star.

busbar: A rigid conductor used for connecting together distributors or feeders.

Busbars: A busbar is used to distribute current to multiple devices in a electrical system. For example, in a household circuit panel, the busbar distributes incoming power to each individual circuit.

Bush, Vannevar : Bush, Vannevar (1890–1974) Born: Everett, Massachusetts, U.S.A.

Busheling: A widely traded form of steel scrap consisting of sheet clips and stampings from metal production. Bushel baskets were used to collect the material through World War II, giving rise to the term.

Bushing: See Universal Bushing Well.

bushing: Bushings are insulators which are used to take high voltage conductors through earthed barriers such as walls, floors, metal, and tanks.

Bushing: An insulating structure, including a through conductor or providing a passageway for such a conductor, with provision for mounting on a barrier, conducting or otherwise, for the purposes of insulating the conductor from the barrier and conducting current from one side of the barrier to the other.

Bushing: The insulated device that allow the safely passing of conductors.

bushing : bushing a rigid, hollow cylindrical insulator which surrounds a conductor and which extends through a metal plate such as a the wall of a transformer tank so as to insulate

the conductor from the wall.

bushing transformer: bushing transformer former which is installed in a transformer bushing so as to take advantage of the insulating qualities of that bushing.

Bushing Well: An insulator having a conductor through it, used to connect equipment to a power source.

Bust Coil: Coils removed from the off gauge reel. The BUST (build up side trimmer) coil contains defects (gauge variation and quality defects) and off spec widths.

busway : busway a specialized raceway which holds un-insulated bus bars in a building.

busy tone multiple access (BTMA) : busy tone multiple access (BTMA) syn-onym for idle tone multiple access.

busy waiting : busy waiting a processor state in which it is reading a lock and finding it busy, so it repeats the read until the lock is available, without attempting to divert to another task. The name derives from the fact that the program is kept busy with this waiting and is not accomplishing anything else while it waits. The entire “busy loop” may be only 2 or 3 instructions.

Butane (C: 410A) straight-chain or branch-chain hydrocarbon extracted from natural gas or refinery gas streams, which is gaseous at standard temperature and pressure. It includes isobutane and normal butane and is designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial butane.

Butcher Saw Steel: A hardened, tempered, and polished high carbon spring steel strip material (carbon content is generally higher than that of a material used for wood band saw applications) with a Rockwell value of roughly C47/49.

Butt End: The residual portion of an extrusion billet that is not forced through the die at the end of the extrusion cycle.

Butt Weld Pipe: Weld made to join two strip ends set against each other.

Butt Welded Tube: The standard steel pipe used in plumbing. Heated skelp is passed continuously through welding rolls, which form the tube and squeeze the hot edges together to make a solid weld.

Butt Welding: Joining two edges or ends by placing one against the other and welding them.

Butt Wrap: A spirally wrapped tape over a cable core where the trailing edge of one wrap just meets the leading edge of the preceding wrap with neither overlap nor spacing.

Butterfly Valves: A butterfly valve is a flow control device that uses a circular plate to regulate flow through the valve. When the valve is completely closed, the axis of the plate is parallel to the direction of flow through the valve, and no flow is possible. Conversely, when the valve is completely open, the plate is positioned perpendicular to the direction of flow and the fluid can move freely past either side of the plate.

butterworth filter: A filter designed to produce a flat response up to the cut-off frequency.

Buttweld Fittings: A Buttweld Fitting is any type of fitting designed to be joined using a butt welding technique, which is typically used for end to end joining of pipe, plate, and other geometries.

Butyl Rubber: Butyl Rubber is a type of synthetic rubber. It has excellent impermeability and is used for air bladders, inner tubes, and water barriers,

Butyl Rubber Sheeting: Butyl Rubber Sheeting is synthetic rubber of uniform thickness. Its impermeable to air, water, and many commonly encountered gases or fluids.

Butyl Stearate: (BSO) A lubricant applied on electrolytic chromium coated steel

Butylene (C: 48) An olefinic hydrocarbon recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Butylene is used in the production of gasoline and various petrochemical products.

Buy-back oil: Crude oil acquired from a host government whereby a portion of the government's ownership interest in the crude oil produced in that country may or should be purchased by the producing firm.

buzz stick : buzz stick a tester for insulators, especially strain insulators in a string. It consists of a pair of probes connected to each side

bw: bw common notation for radian bandwidth in radians per second.

bw: bwa common notation for fractional arithmetic mean radian bandwidth in radians per second.

BW: Braided wire armor. Basket weave.

bw : bwg common notation for fractional geometric mean radian bandwidth in radians per second.

BX: Armored building wire, 600V.

BX cable : BX cable a flexible, steel-armored cable used in residential and industrial wiring.

By Coil: Selling term which refers to product sold in the form of a coil vs. cut plate. Bi Coil is also used in production to refer to coils vs. cut plate

Bypass: A circuit that carries telephone signals from a subscriber to another point without the use of local telephone company circuits.

bypass capacitor: A capacitor placed from a dc signal to ground to remove any ac component of the signal by creating an ac short circuit to ground.

Bypass diode: A diode connected across one or more solar cells in a photovoltaic module such that the diode will conduct if the cell(s) become reverse biased. [UL 1703] Alternatively, diode connected anti-parallel across a part of the solar cells of a Photovoltaic module. It protects these solar cells from thermal destruction in case of total or partial shading of individual solar cells while other cells are exposed to full light.

Bypass Filters: A bypass filter is a secondary filter that is used to augment the primary full-flow filter. The bypass filter takes a percentage of the output flow diverted from the primary filter and further removes smaller particulates that have passed through the coarser, primary filter before returning the fluid to the main circulation channel. This process is often referred to as polishing.

Bypass Level Gauges: A bypass level gauge is used to determine the fill level of a tank in lieu of a sight glass. The gauge is contained in a column that is mounted outside of the fluid container. A float with a permanent magnet contained inside the column rises with fluid level in the gauge and can activate switches, transmitters, etc.

bypass switch : bypass switch a manually-operated switch used to connect load conductors when an automatic transfer switch is disconnected.

Bypassed footage: Bypassed footage is the footage in that section of hole that is abandoned as the result of remedial sidetrack drilling operations.

Byproduct: A secondary or additional product resulting from the feedstock use of energy or the processing of nonenergy materials. For example, the more common byproducts of coke ovens are coal gas, tar, and a mixture of benzene, toluene, and xylenes (BTX).

Byte: A group of eight bits.

Byte: A group of eight binary bits, commonly used to represent digital data.

byte: A group of 8 bits.

byte : byte in most computers, the unit of mem-ory addressing and the smallest quantity di-rectly manipulated by instructions. The term “byte” is of doubtful origin, but was used in some early computers to denote any field within a word (e.g., DEC PDP-10). Since its use on the IBM “Stretch” computer (IBM 7030) and especially the IBM System/360 in the early 1960s, a byte is now generally un-derstood to be 8 bits, although 7 bits is also a possibility.

Byte (B): Eight related bits of data, an eight-bit binary number. Also used to denote the amount of memory required to store one byte of data.

byte serial : byte serial a method of data transmission where bits are transmitted in parallel as bytes and the bytes are transmitted serially. For ex-ample, the Centronics-style printer interface is byte-serial.

byte. : A collection of bits operated upon as a unit; most are 8 bits long; and most character sets use one byte per character. The capacity of storage devices is frequently given in bytes or in k bytes (k meaning 1024 bytes). See also nibble.

Byte-oriented protocol: See character oriented protocol.

C: Centigrade or Celsius

C: Lamp cord, two or more conductors twisted together. Rubber insulation, cotton braid. For pendant or portable use in dry places. No overall covering. 300V or 600V, 60°C

C connector. : A bayonet-locking connector for coax; c is named after carl concelman. See also bnc and tnc.

C/gal: Cents per gallon

c/kt or c/no. : Carrier to noise power density ratio

C/n. : Carrier to noise power ratio.

C₂H₄: Ethylene.

C₂H₆: Ethane.

Ca: Chemical symbol for calcium

Cabinet. : A physical enclosure for rack-mount equipment; standard cabinets have 1¾ inches vertical spacing between mounting holes and 19 inches - wide horizontal spacing between mounting rails.

Cabinets: Cabinet is called as a box. Where we can put some things by arranging them at proper place In cabinet. Like computer cabinet is an almira for process, motherboard and other hardware.

Cable: A stranded conductor or group of individual conductors insulated from each other.

Cable: A chemical compound used to clean dirt, residual insulation & semi con and other foreign material from an insulated cable during the termination process.

cable: Conducting wire or wires separated and surrounded by a dielectric substance or insulation.

Cable: A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).

Cable: The combination of wires having number of wires In bunch is called as Cable.

Cable: An insulated conductor or twisted group of conductors used for the transmission of

electrical energy.

cable : cable an assembly of insulated conductors, either buried or carried on poles (aerial cable).

Cable And Wire Marker: Cable and wire marker is used for mark the different cable according to its root. Or connection.

Cable Assembly: A cable with plugs or connectors on each end.

Cable Boxes: Where the all cables is joint together or from where cables is transferred for different location mainly the cable box is hub for cables

cable channel : An enclosure situated above or in the ground, ventilated or closed, and having dimensions which do not permit the access of persons but allow access to the conduits and/or cables throughout their length during and after installation. A cable channel may or may not form part of the building construction.

Cable Cleaner: A chemical compound used to reduce pulling tension by lubricating a cable when pulled into a duct or conduit.

Cable Cleaner: it may be any solvent or any special chemical to clean the cables

Cable Coolant Hoses: The hose is providing cooling to wire. The coolant hose made from rubber and fiber and than wire is placed in it absorb the heat of wire

cable coupler : A means of enabling the connection or disconnection, at will, of two flexible cables. It consists of a connector and a plug.

Cable Couplers: Coupler is used to join the two wire/cable.

Cable Cutter: Specially designed tool for easy cutting of cable

Cable Cutters: Cable cutter is used to cut the cable in two pieces for wiring purpose

cable ducting : An enclosure of metal or insulating material, other than conduit or cable trunking, intended for the protection of cables which are drawn in after erection of the ducting.

Cable Glands: It is also a cable connector/coupler which is used for connect the cable but in this one dome is there for protect the edge of cable.

Cable Heat Shrink: It's a tube made with plastic and have the property of high shrinkage. Used as a cover for cable/wire for sealing purpose

Cable Jointing Kit: Basically it's a cable hub. Where the cables are joined together. It's a seal packed kit.

cable ladder : A cable support consisting of a series of transverse supporting elements rigidly fixed to main longitudinal supporting members.

cable limiter : cable limiter a cable connector that contains a fuse. Cable limiters are used to protect individual conductors that are connected in parallel on one phase of a circuit.

Cable Lugs: Cable lugs made of aluminum or copper. Which is used with cable end for where earthing is required.

Cable Markers: it is a big in diameter and used where high load of current is there. The wire is having good strength because it having the steel wires in its cover.

Cable modem: A technology in which the TV cable provides Internet access.

Cable Preparation Tool: Cuts, slits and removes insulation from a variety of cable.

Cable Protector: A fuse with characteristics designed to protect cables against fault damage. Cable protectors have unique mounting and crimping terminals.

Cable Pulling Lubricant: The outermost covering of a cable providing overall protection

Cable Pulling Lubricant: it is a special type of lubricant which is used to pulling the cable for industrial use.

Cable Roller: Device installed on cable tray or cable ladder to help pull cables.

Cable Sheath: A rigid structural system used to support cables and raceways. Types of cable trays include ladder, ventilated trough, ventilated channel, and solid bottom

Cable sheath: A conductive protective covering applied to cables. Note A cable sheath may consist of multiple layers of which one or more is conductive.

Cable system, cabling system. : (in lan technology) the medium used to interconnect stations: often called the premises network.

Cable Tie: Means of bundling wire and cable and or means of support.

Cable Tray: A term generally applied to the larger sizes of bare or weatherproofed (covered) and insulated conductors. It is also applied to describe a number of insulated conductors twisted or grouped together.

cable tray : cable tray a specialized form of raceway used to hold insulated electric power cables in a building.

cable tray : A rigid structure use to support cables. A raceway consisting of a continuous base with raised edges and no covering. A cable tray may or may not be perforated.

cable trunking : A closed enclosure normally of rectangular cross section, of which one side is removable or hinged, used for the protection of cables and for the accommodation of other electrical equipment.

cable tunnel : A corridor containing supporting structures for cables and joints and/or other elements of wiring systems and whose dimensions allow persons to pass freely throughout the entire length.

Cable-based lan. : A shared-medium lan that uses a cable for its transmission medium.

Cables Fibre Optic Cable: Fibre Optic Cable is thin flexible cable made of an engineered glass. Data is transmitted through the cable via light pulses. The Optical Fibres act as wave guides; light inside the fiber is subject to total internal reflection. Fibre Optic Cable is used for long distance and high speed data transmission as signals as subject to less loss and higher transmission rates than what is attainable with conductive wires.

Cables Flameproof Insulated Cable: Flameproof insulated cable is cable that uses a flameproof insulator, such as PTFE or inorganic flame retardant minerals like magnesium oxide.

Cables High Temperature Cable: High Temperature Cable is designed for applications where service temperature exceeds 150 deg C. Insulators are typically PTFE. Conductors are nickel or nickel coated copper. Applications include ovens, furnaces, motors and high intensity lighting.

Cables Hv Cable: HV (High Voltage) Cable is used for high voltage power transmission. Special considerations are made in the design of the insulator to isolate the high voltage conductor. Insulator materials must not breakdown due to voltage stress and also control leakage current. HV cable also often utilizes a conductive layer between the insulator and outer jacket connected to ground to equalize stress in the insulator.

Cables Mining Cable: Mining Cable is conductive cable designed for the harsh conditions associated with mining. Both the conductor and insulator are designed from maximum flexibility and performance over a wide temperature range. The jacketing material is abrasion

resistant and chemically inert.

Cables Overhead Line Cable: Overhead Line Cable is a non-insulated conductive cable suitable for overhead power transmission. Cable is suspended overhead by towers and electrically isolated from the tower structure by insulators. The majority of overhead line cable is aluminum conductor steel reinforced (ACSR) construction. ACSR cable uses outer aluminum conductor strands wrapped around a center steel strand for strength.

Cables Pilc Insulated Cable: PILC (Paper Insulated, Lead Covered) Cable is used in power transmission. Conductors are wrapped in oil impregnated paper which is surrounded by a lead jacket. This cable construction was common for underground power transmission but has largely been replaced by polymer insulated cabling in the last half century.

Cables Ptfе Cables: PTFE Cable uses PTFE, well known by the trade name Teflon?, as the insulating jacket material. PTFE cable is appropriate for high temperature applications, and is chemically inert, but is susceptible to puncture and slice damage.

Cabling: The twisting together of two or more insulated conductors to form an element.

CAC: Flexible copper, synthetic tapes, felted asbestos and lacquered braid. 1000V, 125°C

Ca-certificate. : A certificate for one ca issued by another ca.

Cache: High-speed processor memory that buffers commonly used instructions or data to increase processing throughput.

cache: cache an intermediate memory store having storage capacity and access times somewhere in between the general register set and main memory. The cache is usually invisible to the programmer, and its effectiveness comes from being able to exploit program locality to anticipate memory-access patterns and to hold closer to the CPU: most accesses to main memory can be satisfied by the cache, thus making main memory appear to be faster than it actually is.

cache aliasing : cache aliasing a situation where two or more entries (typically from different virtual addresses) in a cache correspond to the same address(es) in main memory. Considered undesirable, as it may lead to a lack of consistency (coherence) when data is written back to main memory.

cache block : cache block the number of bytes transferred as one piece when moving data between levels in the cache hierarchy or between main memory and cache). The term line is sometimes used instead of block. Typical block size is 16-128 bytes and typical cache size is 1-256 KB. The block size is chosen so as to optimize the relationship of the “cache miss ratio,” the cache size, and the block transfer time.

cache coherence : cache coherence the problem of keeping consistent the values of multiple copies of a single variable, residing either in main memory and cache in a uniprocessor, or in different caches in a multiprocessor computer. In a uniprocessor, the problem may arise if the I/O system reads and writes data into the main memory, causing the main memory and cache data to be inconsistent, or if there is aliasing. Old (stale) data could be output if the CPU has written a newer value in the cache, and this has not been transported to the memory. Also, if the I/O system has input a new value to main memory, new data would reside in main memory, but not in the cache.

cache hit : cache hit when the data referenced by the processor is already in the cache.

cache line : cache line a block of data associated with a cache tag.

cache miss : cache miss a reference by the processor to a memory location currently not

housed in the cache.

cache tag : cache tag a bit field associated with each block in the cache. It is used to determine where (and if) a referenced block re-sides in the cache. The tags are typically housed in a separate (and even faster) memory (the “tag directory”) which is searched for in each memory reference. In this search, the high order bits of the memory address are associatively compared with the tags to determine the block location. The number of bits used in the tag depends on the cache block “mapping function” used: “Direct-mapped,” “Fully associative,” or the “Block-set-associative” mapped cache.

Cad Cam Design: CAD CAM Design is the process of using Computer Aided Drafting (CAD) and Computer Aided Manufacturing (CAM) software's for component and process design. Although it is applicable to a number of industries, it is commonly used in reference to CNC machine components.

Cad Conversion: CAD conversion is an engineering service that provides the input, transfer and export of 2D and 3D modeling data used in computer aided drafting and design. Services may include the scanning of a product and conversion to a CAD model, the transfer of old paper drawings to computer models, the translation of CAD information from one software package to another, or the transfer of information from the CAD system to engineering analysis programs and fabrication processes.

CAD/CAM: Computer Aided Design, Computer Aided Manufacturing.

CAD/CAM Machining: CAD/CAM Machining is a term used to refer to any machining process that makes use of digital design software (CAD) and tool path planning software (CAM) to program a CNC machine.

CAD/CAM Software: CAD/CAM Software is used for component design and manufacture. CAD is an acronym for Computer-Aided Design and can refer to any number of software tools used to produce detailed digital drawings and models of components. CAM is an acronym for Computer-Aided Manufacturing and typically refers to software used to graphically design tool paths for a CNC (Computed Numerically Controlled) Machine. While CAD and CAM are historically discrete software tools, modern software often integrates the two functions into a single interface, referred to as integrated CAD/CAM, or simply CAD/CAM.

Cadmium: Chemical symbol Cd. Cadmium is produced primarily as a by product of zinc refining, but also is recovered during the beneficiation and refining of some lead ores and complex copper zinc ores. Cadmium is bluish white soft metal that can be cut with a knife. The principal use of cadmium, which was discovered in Germany in 1817, has been in nickel cadmium batteries for personal, portable communications, electronic and electrical equipment. Other applications include pigments, coatings and plating, stabilizers for plastics and similar synthetics, alloys, lasers and solar cells.

Cadmium (Cd): A chemical element, atomic number 48, used in making certain types of solar cells and batteries.

Cadmium Plating: An Electroplated coating of cadmium on a steel surface which resists atmospheric corrosion. Applications include, nuts, bolts, screws and many hardware items in addition to enclosures.

Cadmium telluride (CdTe): A polycrystalline thin-film photovoltaic material.

CAFE: Corporate Average Fuel Economy

cage-rotor induction motor : cage-rotor induction motor an induction motor whose rotor is occupied by copper or aluminum bars, known as rotor bars, instead of windings. Also commonly referred to as a squirrel-cage induction motor.

CAIDI: A distribution circuit reliability average interruption duration index. It represents the average time required to restore service to the average customer per sustained interruptions.

CAIFI: The customer average interruption frequency index. It is designed to show trends in customers interrupted and helps to show the number of customers affected out of the whole customer base.

Cake: A copper ingot rectangular in cross section intended for rolling.

Calandria: (in a CANDU reactor) a cylindrical reactor vessel which contains the heavy water moderator. It is penetrated from end to end by hundreds of calandria tubes which accommodate the pressure tubes containing the fuel and coolant.

Calcination: A process in which a material is heated to a high temperature without fusing, so that hydrates, carbonates, or other compounds are decomposed and the volatile material is expelled.

Calcium: In the form of calcium silicide acts as a deoxidizer and degasifier when added to steel. Recent developments have found that carbon and alloy steels modified with small amounts of calcium show improved machinability and longer tool life. Transverse ductility and toughness are also enhanced.

Calcium Silicide: An alloy of Calcium, silicon, and iron containing 28 35% Ca, 60 65% Si, and 6% Fe, max., used as a deoxidizer and degasser for steel and cast iron; sometimes called calcium silicide.

Calcium Silicon: An alloy of calcium, silicon, and iron containing 28 35% Ca, 60 65% Si, and 6% Fe, max., used as a deoxidizer and degasser for steel and cast iron; sometimes called calcium silicide.

Calcium Sulfate: Chemical formula is $CaSO_4$

Calcium sulfate: A white crystalline salt, insoluble in water. Used in Keene's cement, in pigments, as a paper filler, and as a drying agent.

Calcium sulfite: A white powder, soluble in diluted sulfuric acid. Used in the sulfite process for the manufacture of wood pulp.

Calcium Wired Injection: Wire feeding of steel clad calcium wire into molten bath to provide favorable kinetics for inclusion modification.

calculating board : calculating board a single-phase scale model of a power system that was used to calculate power flows before the advent of electronic computers.

Calibration: The process of adjusting an instrument or compiling a deviation chart so that its reading can be correlated to the actual value being measured.

Calibration: AFTER some time machines and equipment measuring equipment are showing some extra reading because of continuous uses so after some time calibration is done to set the value of equipment to zero or defaults

Calibration: Adjustment of a device so the output is within a specified range for particular values of the input.

calibration: The graduation or confirmation of the graduation of an instrument to enable measurements in definite units to be made with it. Thus for example the deflection of a meter can be calibrated to read the current causing the deflection.

Calibration: basically calibration is comparison between the measurements. It is a method of aligning the reading or tolerance of any measuring equipment with master piece.

Calibration: The process of setting a measurement instrument by use of standards.

calibration : calibration the procedure of character-izing the equipment in place for a particular measurement set-up relative to some known quantity, usually a calibration standard trace-able to the National Institute for Standards and Technology (NIST).

calibration kits : calibration kits designed for use with vector network analyzers. With these kits you can make error-corrected measurements of devices by measuring known devices (standards) over the frequency range of in-terest. Calibration standards include shorts, open, sliding, and fixed loads.

California Independent System Operator (Cal-ISO): The FERCre-gulated control area operator of the California transmission grid. Its responsibilities include providing nondiscriminatory access to the grid, managing congestion, maintaining the reliability and security of the grid, and providing billing and

California power exchange: A State-chartered, non-profit corporation which provides day-ahead and hour-ahead markets for energy and ancillary services in accordance with the power exchange tariff. The power exchange is a scheduling coordinator and is independent of both the independent system operator and all other market participants.

California Power Exchange (CalPX): Now defunct, this independent California agency was responsible for conducting an auction for the generators seeking to sell energy and for loads that are not otherwise being served by bilateral contracts. The CalPX was responsible for scheduling generati

California Public Utilities Commission (CPUC): Headquartered in San Francisco, the CPUC regulates telecommunications, electric, natural gas, water, railroad, rail transit and passenger transportation companies. The CPUC is chartered by the State of California to assure consumers have safe, reliable

Caliper Disc Brake: in disc brake rotating disc is stop by putting pressure on disc by pads and a caliper is used to puss the pad to disc.

Cal-ISO: See California Independent System Operator.

Call (1) : a transmission made for the purpose of identifying the transmitting station and the station for which the transmission is intended.

Call (2) : a request for connection or the connection resulting from such a request. See also mini-call and virtual call.

call accounting, call accounting record. : (in packet-switched networks) the process of accumulating data on individual calls or of reporting such data; usually includes start and end times, ntn or nui, and number of data segments and packets transmitted for each individual call.

call instruction : call instruction (1) command within a computer program that instructs the com-puter to go to a subroutine.(2) an instruction used to enter a subrou-tine. When a call instruction executes, the current program counter is saved on stack, and the address of the subroutine (provided by the call instruction) is used as the new pro-gram counter.

Call request packet.: (in packet-switched networks) the packet sent by the originating dte showing requested ntn or nui, network facilities, and call user data.

Call sign, basic group. : A call sign assigned to a merchant ship specifically to form the basis

for obtaining an encrypted call sign.

Call sign, collective. : Any call sign which represents two or more facilities, commands, authorities or units. The collective call sign for any of these includes the commander thereof and all subordinate commanders therein.

Call sign, encrypted. : A call sign which has been encrypted by means of an appropriate encryption system.

Call sign, international. : A call sign assigned in accordance with the provisions of the international telecommunication union to identify a radio station. The nationality of the radio station is identified by the first or the first two characters. When used in visual signalling, international call signs are referred to as signal letters.

Call sign, military. : A call sign assigned to a military ship specifically to form the basis for obtaining an encrypted call sign.

Call sign, net. : A call sign which represents all stations within a net.

Call sign, tactical. : A call sign which identifies a tactical command(s) or tactical communication facility(ies).

Call sign, visual. : A call sign provided primarily for visual signalling,

Call sign, voice. : A call sign provided primarily for voice communications.

Call sign. : Any combination of characters or pronounceable word(s) which identifies a communication facility(ies), command(s), authority(ies), activity(ies) or unit(s); used primarily for establishing and maintaining communications.

Call user data. : (in packet-switched networks) user information transmitted in a call request packet to the destination dte.

called station. : The station to which a message is routed (in message relay) or a transmission is directed.

Called, calling, or called/calling channel. : (in lan technology and packet-switched networks) a called channel is a channel that can receive but not originate calls; a calling channel can originate but not receive calls; and finally, a called/calling channel can both originate and receive calls.

Calling station (1). : General term. The station initiating a transmission.

Calling station (2). : In message relay. The station preparing the message for transmission.

Calorie: it is a unit of energy. Symbol is for calorie is Cal

Calorie: A calorie is the energy required to raise one gram of water one degree Celsius at one atmosphere. The onset of second degree burns may occur at 1.2 calories per centimeter squared per second. One calorie per centimeter squared per second can be

Calorie: one calorie is the amount of heat required to raise the temperature of 1 gram of water by 1°C, from 14.5 °C to 15.5 °C

calorie (cal): Unit of quantity of heat. The amount of heat required to raise the temperature of 1 gram of water through 1o C. 1 calorie = 4.184 joule.

calorific value: The calorific value of a fuel is the quantity of heat produced by a given weight of the fuel on complete combustion.

Calorifiers: An vessel used for transfer heat to water in a vessel by indirect means, the source of heat being contained in a pipe

Calorimeter: Calorimeter is an measuring device basically used for measure the chemical or physical change in a reaction

calorimeter : calorimeter a device used to determine particle energies by measuring the ionization of a particle shower in a heavy metal, usually iron and lead.

CAM : CAM acronym for content-addressable memory or computer-aided manufacturing. See associative memory, computer-aided manufacturing.

Cam Grinder: Grinder is used to finish the surface of a rough surface and cam grinder is specifically used to grind the surface of cam shaft for more smoothness of surface

CAMAC : CAMAC acronym for computer auto-mated monitor and control — an internationally accepted set of standards for electronic instrumentation, which specifies mechanical, electrical, and functional characteristics of the instrument modules.

Camber Or Bow: Bow is an musical instrument which move or slide on other musical instrument to get sound or music

Camber Tolerances: It is an minimum or maximum deviation in the edge of metal sheet after manufacturing

Cambridge ring. : (in lan technology) an empty slot ring lan. It has not yet achieved a great deal of popularity outside its country of origin, uk - where several near-cambridge ring systems are being marketed.

camera : camera a device for acquiring an image, usually in a photographic or electronic form in the latter case typically as a TV camera. Cameras may operate in optical, infra red, or other wavelength bands.

camera calibration : camera calibration certain camera parameters, or equivalently some quantities that are required for determination of the perspective projection on an image plane of a point in the 3-D world, are calculated by using the known correspondence between some points in the 3-D world and their images in the image plane.

camera model : camera model (1) the representation of the geometric and physical features of a stereovision system, with relative references between the two camera coordinate systems, and absolute references to a fixed coordinate system.

Camera Shutter Steel: It is a type of rolled steel having high hardness toughness and having bright polishing

Camp-on, camp-on-busy.: (in lan technology) a cable-based lan facility that allows users to wait on line (in queue) if the requested resource is busy and that connects the users in queue - on a first-come, first-served basis - when the requested resource becomes available.

Campus: A complex of buildings which operate as one continuous facility - e.g., multi-building corporate headquarters, university, military base.

Can: It's a aluminum vessel used for packed drink and other eatable things mainly use and throw purpose

Can: Slang for an overhead transformer.

can : can slang for a pole-top distribution transformer.

Can Dimensions: It's in cylindrical shape. Dimension of can is based on its use. Dimension is contain the Height, Upper die, Lower die, and thickness of sheet

Canadian deuterium uranium reactor (CANDU): Uses heavy water or deuterium oxide (D₂O), rather than light water (H₂O), as the coolant and moderator. Deuterium is an isotope of hydrogen that has a different neutron absorption spectrum from that of ordinary hydrogen. In a deuterium-moderated-reactor, fuel made from natural uranium (0.71U-235) can sustain a chain reaction.

Candela (cd): The standard unit for luminous intensity. One candela is equal to one lumen per steradian.

candela (Cd): The candela is the SI unit of luminous intensity. It is defined as the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540×10^{12} hertz and that has a radiant intensity in that direction of $1/683$ watt per steradian [1979]

Candela (cd): The standard unit of luminous intensity in the International System of Units (SI)

Candela, cd: (formerly candle) The unit of luminous intensity.

Candelabra: A small screw-base threaded lampholder accepting a bulb approximately 1/2" in diameter commonly used in night lights, indicator lights and Christmas tree bulbs.

candle power: The candle power of a light source, in a given direction, is the luminous intensity of the source in that direction expressed in terms of the candela.

Candlepower: A curve, generally polar, representing the variation of luminous intensity of a lamp or luminaire in a plane through the light center.

Candlepower: it is the obsolete unit expressing luminous intensity, equal to 0.981 candela.

Candlepower Distribution Curve: Luminous intensity expressed in candelas.

Candlepower distribution curve: A curve, generally polar, representing the variation of luminous intensity of a lamp or luminaire in a plane through the light center.

Candlepower, cp: Term which expresses intensity of a beam of light.

CANDU: Canadian deuterium uranium reactor, moderated and (usually) cooled by heavy water.

Canister: It is also in cylindrical shape. It is used in can as a protective layer.

canned magnet : canned magnet a magnet that is completely encased in its own vacuum jacket.

Cannel coal: A compact, tough variety of coal, originating from organic spore residues, that is non-caking, contains a high percentage of volatile matter, ignites easily, and burns with a luminous smoky flame.

Canning: To prevent the food from external environment generally kept in vessel or jars, this process is called canning of foods

Cannon Plug: Cannon plug is also a jointer which is used to transfer heat from one to another place it's a high load having plugs having male and female part

Canny operator : Canny operator an edge detector devised by John Canny as the optimal solution to a variational problem with three constraints. The general solution obtained numerically can be approximated in practical contexts by the first derivative of a Gaussian. Canny operator usually refers to the extension to two dimensions of this approximation, i.e., to use of a set of oriented operators whose orthogonal cross sections are a Gaussian and the derivative of a Gaussian. Its advantage is its capability for allowing edges and their orientations to be detected to sub-pixel accuracy. It uses a convolution with a Gaussian to reduce noise and a derivative to enhance edges in the resulting smoothed image. The two are combined into one step — a convolution with the derivative of a Gaussian. A hysteresis thresholding stage is included, to allow closed contours to remain closed.

Cantilever: Cantilever is a type of beam or plate, which hold from center or one side and hanging from other side.

CAP : CAP See carrierless amplitude/phase modulation.

Cap Sheet: To cover the sheet by some insulated material to make the sheet water resistance and water insulated

capability : capability an object that contains both a pointer to another object and a set of access permissions that specify the modes of access permitted to the associated object from a process that holds the capability.

capability diagram : capability diagram also called capability curve. Graphical representation of the complex power limits for safe operation of a synchronous machine. The vertical axis is average power P and the horizontal axis is

capability list : capability list a list of capabilities, usually associated with a process, defining a set of objects and the modes of access permitted to those objects. Computer systems have been designed to use capability lists to define the memory environment for process execution.

capability : Maximum load that a generating unit can carry without exceeding ratings.

Capable of being fueled: A vehicle is capable of being fueled by a particular fuel(s) if that vehicle has the engine components in place to make operation possible on the fuel(s). The vehicle does not necessarily have to run on the fuel(s) in order for that vehicle to be considered capable of being fueled by the fuel(s). For example, a vehicle that is equipped to operate on either gasoline or natural gas but normally operates on gasoline is considered to be capable of being fueled by gasoline and natural gas.

capacitance: capacitance the measure of the electrical size of a capacitor, in units of farads. Thus a capacitor with a large capacitance stores more electrons (coulombs of charge) at a given voltage than one with a smaller capacitance.

Capacitance: 1) The ratio of an impressed charge on a conductor to the corresponding change in potential. 2) The ratio of the charge on either conductor of a capacitor to the potential difference between the conductors. 3) The property of being able to collect a charge

capacitance: The ability of a system of electrical conductors and insulators to store electric charge when a potential difference exists between the conductors. It is expressed as a ratio of the electrical charge stored to the voltage across the conductors. [Unit farad or F]

Capacitance: That property of a system of conductors and dielectrics that permits the storage of electricity when potential difference exists between the conductors. Its value is expressed as the ratio of quantity of electricity to a potential difference. A capacitance value is always positive.

Capacitance: The ratio of the electric charge transferred from one to the other of a pair of conductors to the resulting potential difference between them. The ability of a body to store an electrical charge.

Capacitance: The ratio of the electrostatic charge on a conductor to the potential difference between the conductors required to maintain the charge.

Capacitance (C): The ability of two conductors separated by an insulator to store an electrical charge; measured in farads (F).

capacitance bridge: capacitance bridge a circuit that includes two branches which form a balanced drive (two sinusoidal voltage sources connected in series with common point grounded) and two capacitances connected in series between free ends of the voltage sources. The detector of current (virtual ground of an operational amplifier is a suitable choice) is

connected between the common point of the capacitors

Capacitive Coupling: Electrical interaction between two conductors required to maintain that charge.

Capacitive Level Sensors: Its used to prevent the overflow in vessel. The sensor read the max level and close the valve

Capacitive Proximity Switches: It is a type of sensor which is used as a preventive device in any machine or equipment

Capacitive reactance (X_C): The opposition that a capacitor offers to alternating current. This opposition, in the form of a counter electromotive force (cemf), is expressed in ohms.

Capacitor: An assembly of capacitors and switching equipment, controls, etc., required for a complete operating installation.

capacitor: A device consisting of two conducting surfaces separated by a layer of insulating material (dielectric) and having the ability of storing electric energy. Also called a condenser, the principal characteristics of which is the capacitance.

Capacitor: it is a element used to store charge temporarily, consisting of two metallic plates separated and insulated from each other by a dielectric.

Capacitor bank: A voltage transformer that uses capacitors to obtain a voltage divider effect. It is utilized at EHV voltages instead of an electromagnetic VT for cost and size purposes.

Capacitor Bank: An array of capacitors connected into a circuit. Capacitors are used to control voltages supplied to the customer by eliminating the voltage drop in the system caused by inductive reactive loads.

capacitor bank : capacitor bank (1) an assembly at one location of capacitors and all necessary accessories, such as switching equipment, protective equipment, and controls, required for a complete operating installation.

Capacitor or Condensor: An electrical device that causes the current to lead the voltage, opposite in effect to inductive reactance. It is used to neutralize the objectional effect of lagging (inductive reactance), which overloads the power source. It also acts as a low resistance path to ground for currents of radio frequency, thus effectively reducing radio disturbance.

Capacitor Voltage Transformer: An electrical device having Capacitance.

Capacitor Voltage Transformer: it is type of transformer used to step down extra high voltage and output it in low voltage .

Capacitor : A device designed to provide a specific amount of capacitance.

Capacity: Normal ability to produce steel in a given period. This rating should include maintenance requirements, but because such service is scheduled to match the machinery's needs (not the calendar's), a mill might run at more than 100% of capacity one month and then fall well below rated capacity as maintenance is performed. Engineered capacity. The theoretical volume of a mill, given its constraints of raw material supply and normal working speed. True? Capacity. Volume at full utilization, allowing for the maintenance of equipment and reflecting current material constraints. (Bottlenecks of supply and distribution can change over time ? capacity will expand or reduce.)

Capacity: See Generator capacity and (installed) Generator name plate capacity.

Capacity (Battery): The quantity of electricity delivered by a battery under specific conditions, usually expressed in amperehours.

Capacity (purchased): The amount of energy and capacity available for purchase from outside the system.

Capacity charge: An element in a two-part pricing method used in capacity transactions (energy charge is the other element). The capacity charge, sometimes called Demand Charge, is assessed on the amount of capacity being purchased.

capacity charge : An charge or assessment based on the amount of capacity being purchased.

Capacity factor: The ratio of the electrical energy produced by a generating unit for the period of time considered to the electrical energy that could have been produced at continuous full power operation during the same period.

capacity factor: The ratio of the electric energy produced by a generating unit to the electrical energy that could have been produced at continuous full-power operations.

Capacity factor: The amount of energy that the system produces at a particular site as a percentage of the total amount that it would produce if it operated at rated capacity during the entire year. For example, the capacity factor for a wind farm ranges from 20% to 35%.

Thirty-five percent is close to the technology potential.

capacity miss : capacity miss a category of cache misses denoting the case where the cache is not large enough to hold all blocks needed during execution of a program. See also conflict miss , cold start miss.

capacity region : capacity region for a multiple terminal communications system. The entire set of rate-vectors for which there exist channel codes such that the probability of making a decoding error can be made arbitrary-

Capacity transaction: The acquisition of a specified quantity of generating capacity from another utility for a specified period of time. The utility selling the power is obligated to make available to the buyer a specified quantity of power.

Capacity utilization: Capacity utilization is computed by dividing production by productive capacity and multiplying by 100.

capacity : The maximum load a generating unit, generating station, or other electrical apparatus is rated to carry by the manufacturer or can actually carry under existing service conditions.

Cape Chisel: This chisel is having long cutting tip compare to general chisel. It is used to cut keys and guides way.

Capitance Detector: A device with single or multiple probes that with an object coming within proximity of the detector, will cause a change in probe capacitance. This change in probe capacitance will allow the detector to turn the load on or off.

Capillary Action: The phenomenon of liquid rising in a small interstice due to surface tension.

Capital cost: The cost of field development and plant construction and the equipment required for industry operations.

Capital stock: Property, plant and equipment used in the production, processing and distribution of energy resources.

Capped Steel: it is also called deoxidized steel. When all oxygen is removed during melting process of steel than capped steel is made

Captive coal: Coal produced to satisfy the needs of the mine owner, or of a parent, subsidiary, or other affiliate of the mine owner (for example, steel companies and electricity

generators), rather than for open market sale.

captive consumer : A consumer who does not have realistic alternatives to buying power from the local utility, even if that consumer had the legal right to buy from competitors.

captive generation: Generating plant available at CEB customer facilities, but not connected in parallel with the CEB network.

captive load: Load which may be supplied by an Embedded Generator, in addition to the generator auxiliaries, which is within the Generating Company premises.

Captive refinery MTBE plants: MTBE (methyltertiary butyl ether) production facilities primarily located within refineries. These integrated refinery units produce MTBE from Fluid Cat Cracker isobutylene with production dedicated to internal gasoline blending requirements.

Captive refinery oxygenate plants: Oxygenate production facilities located within or adjacent to a refinery complex.

capture effect : capture effect a phenomenon found in packet switched networks in which nonequal powers in packet radio networks using contention protocols lead to higher throughputs. In contention protocols used in packet radio networks, the transmitted packets are allowed to collide. If two packets collide and one is significantly stronger in power, this packet is more likely to be captured (detected) by the receiver.

capture range : capture range the range of input frequencies over which the PLL can acquire phase lock.

capture register : capture register internal register which, triggered by a specified internal or external signal, store or "capture" the contents of an internal timer or counter.

CARB: California Air Resources Board

Carbide: Carbide is a compound of carbon and having less electronegative elements

Carbide Bit: Bit is used to drill holes in metal. Carbide bit is a type of bit having carbon on the cutting edge

Carbide Boring Tools: Tools are used to drill of bore holes in metal. Carbide boring tool is a type of bit having carbon on the cutting edge

Carbide End Mills: It is also a cutting tool having cutting edge on the face at some length

Carbide Tool Bits: Bit is used to cut the material. Lathe machine is best example of cutting bit where bit is stable position and work is in rotating motion

Carbon: This is a chemical element and shown by C. Graphite and diamond having high carbon

Carbon black: An amorphous form of carbon, produced commercially by thermal or oxidative decomposition of hydrocarbons and used principally in rubber goods, pigments, and printer's ink.

carbon brush : carbon brush a block of carbon used to make an electrical contact to a rotating coil via the commutator of a DC machine or the slip rings of a synchronous machine.

Carbon budget: The balance of the exchanges (incomes and losses) of carbon between carbon sinks (e.g., atmosphere and biosphere) in the carbon cycle. Also see Carbon cycle and Carbon sink.

Carbon cycle: All carbon sinks and exchanges of carbon from one sink to another by various chemical, physical, geological, and biological processes. Also see Carbon sink.

Carbon dioxide: A colorless, odorless, non-poisonous gas that is a normal part of Earth's atmosphere. Carbon dioxide is a product of fossil-fuel combustion as well as other processes.

It is considered a greenhouse gas as it traps heat (infrared energy) radiated by the Earth into the atmosphere and thereby contributes to the potential for global warming. The global warming potential (GWP) of other greenhouse gases is measured in relation to that of carbon dioxide, which by international scientific convention is assigned a value of one (1). Also see Global warming potential (GWP) and Greenhouse gases.

Carbon dioxide equivalent: The amount of carbon dioxide by weight emitted into the atmosphere that would produce the same estimated radiative forcing as a given weight of another radiatively active gas. Carbon dioxide equivalents are computed by multiplying the weight of the gas being measured (for example, methane) by its estimated global warming potential (which is 21 for methane). "Carbon equivalent units" are defined as carbon dioxide equivalents multiplied by the carbon content of carbon dioxide (i.e., 12/44).

Carbon Equivalent: Referring to the rating of weld ability, this is a value that takes into account the equivalent additive effects of carbon and other alloying elements on a particular characteristic of a steel. For rating of weld ability, a formula commonly used is: $CE = 3D C + (Mn/6) + [(Cr + Mo + V)/5] + [(Ni + Cu)/15]$.

Carbon Fiber Angles: The material is composite of carbon and fiber and angles are made by it at different places, angles are in the shape of L

Carbon Fiber Rods: Carbon fiber is also used in the shape of rods. Carbon fiber rods are highly strength and stiffness

Carbon Fiber Sheet: The sheet is also made by carbon fiber, and used for car body making. Because of its any shape made property. But currently it's a very costly so its used in car body for only concept or prototype

Carbon Fiber Tubing: Tubes are used of carbon fiber because of its high strength and high stiffness

Carbon Filter: Carbon filters are used to remove the impurities of substance

Carbon flux: See Carbon budget.

Carbon Free: Metals and alloys which are practically free from carbon.

Carbon intensity: The amount of carbon by weight emitted per unit of energy consumed. A common measure of carbon intensity is weight of carbon per British thermal unit (Btu) of energy. When there is only one fossil fuel under consideration, the carbon intensity and the emissions coefficient are identical. When there are several fuels, carbon intensity is based on their combined emissions coefficients weighted by their energy consumption levels. Also see Emissions coefficient and Carbon output rate.

Carbon output rate: The amount of carbon by weight per kilowatt-hour of electricity produced.

Carbon Potential: A measure of the capacity of an environment containing active carbon to alter or maintain, under prescribed conditions, the carbon concentration in a steel.

Carbon Range: In steel specifications, the carbon range is the difference between the minimum and maximum amount of carbon acceptable.

Carbon Restoration: Replacing the carbon lost in the surface layer during previous processing by carburizing this layer to substantially the original carbon level.

Carbon Sand: A molding aggregate consisting principally of carbon (graphite) granules.

Carbon sequestration: The fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes.

Carbon sink: A reservoir that absorbs or takes up released carbon from another part of the carbon cycle. The four sinks, which are regions of the Earth within which carbon behaves in a systematic manner, are the atmosphere, terrestrial biosphere (usually including freshwater systems), oceans, and sediments (including fossil fuels).

Carbon stocks: The quantity of carbon stored in biological and physical systems including trees, products of harvested trees, agricultural crops, plants, wood and paper products and other terrestrial biosphere sinks, soils, oceans, and sedimentary and geological sinks.

Carbonate: Carbonate is a acid used in chemical reactions. It is the combination of carbonate group

Carbonate Hardness: The measurement of acidified water which was happen by the presence of carbon in the water

Carbonitriding: A case hardening process in which a suitable ferrous material is heated above the lower transformation temperature in a gaseous atmosphere of such composition as to cause simultaneous absorption of carbon and nitrogen by the surface and by diffusion, create a concentration gradient. The process is completed by cooling at a rate that produces the desired properties in the workpiece.

Carbonitriding.: It is a surface modifications technique which Is used to increase the hardness of the material by adding carbon,

Carbonizing: This is the technique to convert raw carbon to a pure carbon.it is widely used in making coal gases from raw coal

Carborundum: A trade name for an abrasive compounded of silicon and carbon (silicon carbide).

Carburetor: A fuel delivery device for producing a proper mixture of gasoline vapor and air and for delivering it to the intake manifold of an internal combustion engine. Gasoline is gravity-fed from a reservoir bowl into a throttle bore, where it is allowed to evaporate into the stream of air being inducted by the engine. Also see Diesel Fuel System and Fuel Injection.

Carburizing Furnaces: Carburizing furnace is used for metal forming process where carbon is deposited to other material to increase the hardness of the material.

carcinotron : carcinotron a forward radial traveling wave amplifier in which microwave signals are fed to the radial slow wave structure.

card : card a printed circuit board that can be plugged into a main board to enhance the functionality or memory of a computer.

card cage : card cage mechanical device for holding circuit cards into a backplane.

Card Key Reader: This is an inbuilt sensor mounted device, which read the specific card and act as a lock. The card data is feed in the device so that the device can read the card,

Card module.: A printed-circuit board that plugs into an equipment chassis.

Cardboard Drum: This is a drum in cylindrical shape basically made from cardboard. This is used where light material is kept by some period.it is environment friendly.

CardBus: It is a card like small BUS used in small computers .

cardinal series : cardinal series the formula by which samples of a bandlimited signal are interpo-lated to form a continuous time signal.

cardinal vowel : cardinal vowel according to English pho-netician Daniel Jones, a vowel corresponding to one of the extreme positions of the vowel diagram.

carnot's cycle: An ideal reversible four step cycle of operations for the working substance

of a heat engine.

carrier: In a semiconductor, the mobile electrons or holes which carry charges are called carriers.

Carrier: A continuous frequency capable of being modulated by an information carrying signal.

Carrier (1). : A continuous signal which is modulated with a second, information-carrying signal.

Carrier (2). : An oscillator or wave, usually periodic, some of the characteristics of which are intended to be constrained by modulation to follow the variations of a signal or of other oscillation.

carrier amplitude : carrier amplitude amplitude of the radio frequency sinusoid used as a vehicle for transporting intelligence from the sending end of a communications link to the receiving end. For an AM, FM, or PM wave, the peak amplitude of the spectral component in the frequency domain about which symmetry exists. The carrier amplitude (as a function of time) contains a portion of the intelligence for angle modulation (See frequency modulation and phase modulation). In contrast, the carrier amplitude contains no information for AM or any of the SSB variations (See amplitude modulation and single sideband modulation), but is merely used as a frequency marker.

carrier frequency : carrier frequency in pulse-width-modulated (PWM) switching schemes, the switching frequency that establishes the frequency at which the converter switches are switched. In sine-triangle PWM, the carrier frequency

carrier lifetime : carrier lifetime the average duration an electron or a hole stays in a certain state.

carrier phase : carrier phase the phase of a sinusoidal signal that is the carrier in a modulation scheme such as AM, FM, SSB, etc. The carrier may be defined in the form $A \cos(\omega t + \phi)$. The carrier is specified by the parameters A (amplitude), ω (carrier frequency), and ϕ (carrier phase).

Carrier sense multiple access with collision detection(CSMA/CD): CSMA with retransmission when collision is detected.

Carrier sense multiple access(CSMA): A contention access method in which each station listens to the line before transmitting data.

carrier shift : carrier shift the difference in frequency between the steady state, mark, and space in frequency shift keying (FSK) systems.

Carrier signal: A high frequency signal used for digital-to-analog or analog-to-analog modulation. One of the characteristics of the carrier signal is changed according to the modulating data.

carrier signal : carrier signal the RF signal in a communications system that has the modulating signal superimposed on it. This signal may have its frequency, amplitude, or phase varied to form a modulated signal. Without modulation it is a simple RF signal.

carrier wave: A continuous electromagnetic radiation, of constant amplitude and frequency, emitted by a transmitter. By modulation of the carrier wave, oscillations caused at the transmitting end are conveyed to the receiving end.

Carrier, full. : Carrier wave emitted at a power level between 8db and 6db below the peak envelope power.

Carrier, reduced. : Carrier wave emitted at a power level between 6db and 32db (preferably between 16db and 26db) below the peak envelope power.

Carrier, suppressed. : Carrier restricted to a power level more than 32db (preferably more than 40db) below the peak envelope power.

Carrierless amplitude/phase (CAP): A modulation technique similar to QAM, but without a carrier signal.

carry : carry overflow signal that occurs when the sum of the operands at the inputs of the adder equals the base. A binary adder, adding 1 C 1 will produce a sum of 0 and carry of 1.

Carrying costs: Costs incurred in order to retain exploration and property rights after acquisition but before production has occurred. Such costs include legal costs for title defense, ad valorem taxes on nonproducing mineral properties, shut-in royalties, and delay rentals.

Carryover: The part or something is transferred from previous one is called as carryover. Or something is taken from previous version is a carryover

Cars: Car is an automotive vehicle, which is current four wheel or three wheels and door according to need and runs on an engine. Engine is driven by petrol, diesel or electricity.

cartesian co-ordinates: The (x,y) co-ordinates of a point in the plane.

Cartesian product : Cartesian product a mathematical operation on two sets. The Cartesian product of two sets, say A and B, denoted $A \times B$, is the set of all ordered pairs with the first element of each pair an element of A and the other an element of B. That is,

Cartridge Brass: This is made with brass and used in Guns as a bullet, or shell. Cartridge without a bullet mounted on a head is called a shell.

cartridge fuse: It is a fuse inside a cartridge. The fuse wire is usually enclosed in an evacuated glass tube with metal end caps.

Cartridge Fuse: A fuse consisting of a current responsive element inside a fuse tube with terminals on both ends.

cartridge fuse link : A device comprising a fuse element or several fuse elements connected in parallel enclosed in a cartridge usually filled with arc extinguishing medium and connected to terminations (see fuse link).

Cartridge Heater: This is a heating element with electrical resistivity and used in heating process

CAS: Channel Associated Signaling

Cascade: Cascade is term used in chemical industry to define the series of process.

cascade connection: An arrangement of two or more components or circuits such that the output of one is the input to the next.

cascade system : cascade system a 3-level system containing high-, intermediate-, and low-energy states. Resembling a cascade, these states are coupled, in that sequence, by two electromagnetic fields. See also cathodoluminescent.

Cascade Systems: To define the series of process a system is used called as cascade system In this process are joint in manner that the series of recitation is maintained

cascode : cascode a circuit technique in which the current output of the collector (drain) of a BJT (FET) is buffered by a common base (common gate) amplifier stage. The purpose is to increase the bandwidth and/or output resistance.

cascode amplifier : cascode amplifier an amplifier consisting of a grounded-emitter input

stage that drives a grounded-base output stage; advantages include high gain and low noise; widely used in television tuners. See also cascode.

CASE : CASE See computer-aided software engineering.

Case Drain Line: The drain pipe for remove slag or unused material from chemical reaction or chemical case

Cash and carry: Kerosene, fuel oil, or bottled gas (tank or propane) purchased with cash, by check, or by credit card and taken home by the purchaser. The purchaser provides the container or pays extra for the container.

Casing: Insert the stepped rods having different diameter at some length inserted in predrilled hole to hold something or support something

Casinghead gas (or oil well gas): Natural gas produced along with crude oil from oil wells. It contains either dissolved or associated gas or both.

Cast Iron Fittings: The fitting component is made from cast iron. Cast iron fitting is used in plumbing as T- unit, L-unit and other

Cast silicon: Crystalline silicon obtained by pouring pure molten silicon into a vertical mold and adjusting the temperature gradient along the mold volume during cooling to obtain slow, vertically advancing crystallization of the silicon. The polycrystalline ingot thus formed is composed of large, relatively parallel, interlocking crystals. The cast ingots are sawed into wafers for further fabrication into photovoltaic cells. Cast silicon wafers and ribbon silicon sheets fabricated into cells are usually referred to as polycrystalline photovoltaic cells.

Cast Steel: Cast steel is the alloy with carbon having the carbon content of 1.7%. Having the properties better than cast iron. Any complicated shapes are made in one part.

Cast Tape: A material which is formed directly into a tape by means of flowing or "casting" a solution or dispersion of the film-forming material onto a suitable carrier, then removing the solvent - as opposed to skiving or slicing a block of material into a tape form.

castellation : castellation recessed metallized feature on the edges of a chip carrier that interconnect conducting surfaces or planes within or on the chip carrier.

Castigated Nut (Castle Nut): This a joining device called as Nut. In this slot is cut on the extended head of nut, used in deep hole threads having rods so that nut can loose by T from top most grooves

Casting Drawing: Casting is made from cast iron and generally In one part. And casting drawing is made to build a specific part from cast iron by casting process

Casting Layout: To check the overall dimensions of casting a casting layout is made,

Casting Yield: The weight of casting divided by total poured metal for casting is called as casting yield

Castor Wheel : Mechanical wheel made in different-2 material according to use. But made in plastic. Used as cooler, fridge or TV stand wheel

casual filter : casual filter a filter of which the transition from the passband to the stopband is gradual, not ideal. This filter is realizable.

Cat 5 Cable: See "Category 5 Cable"

catadioptric : catadioptric an optical system made up of both refractive elements (lenses) and re-reflective elements (mirrors).

Catalyst coke: See Petroleum coke, catalyst.

Catalytic converter: A device containing a catalyst for converting automobile exhaust into

mostly harmless products.

Catalytic cracking: The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Catalytic hydrocracking: A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high octane gasoline, reformer charge stock, jet fuel, and /or high grade fuel oil. The process uses one or more catalysts, depending on product output, and can handle high sulfur feed stocks without prior desulfurization.

Catalytic hydrotreating: A refining process for treating petroleum fractions from atmospheric or vacuum distillation units (e.g., naphthas, middle distillates, reformer feeds, residual fuel oil, and heavy gas oil) and other petroleum (e.g., cat cracked naphtha, coker naphtha, gas oil, etc.) in the presence of catalysts and substantial quantities of hydrogen. Hydrotreating includes desulfurization, removal of substances (e.g., nitrogen compounds) that deactivate catalysts, conversion of olefins to paraffins to reduce gum formation in gasoline, and other processes to upgrade the quality of the fractions.

Catalytic reforming: A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules, there by converting paraffinic and naphthenic type hydrocarbons (e.g., low octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline. Catalytic reforming is reported in two categories. They are

catastrophic code : catastrophic code a convolutional code in which a finite number of code symbol er-rors can cause an unlimited number of de-coded symbol errors.

catcher : catcher a cavity resonator of a multi-cavity klystron proximate to the collector to catch microwave energy from the bunched electrons.

categoric input : categoric input a nonnumeric (symbolic) input, e.g., gender, color, which is usually fed to a network using one-out-of-N coding.

Category 5 Cable: Also known as "Cat 5", this cable is used for fast ethernet and telephone communications. The cable is constructed of 4 twisted pair of copper wire.

catenary: Curve formed by a chain or string hanging from two fixed points.

catenation : catenation symbols strung together to form a larger sequence, as the characters in a word and the digits in a number.

Cathead: This is a wooden beam used in ship. Its work is to support the ship's anchor

Cathode: 1) The negative electrode, that emits electrons or gives off negative ions and toward which positive ions move or collect in a voltaic cell or other such device. 2) The negative pole of a battery.

cathode: Negative electrode. The element of an electronic device that provides the flow of electrons.

Cathode: The electrode of cell having positive charge movement.

cathode : cathode the negative electrode of a de-vice. Contrast with anode.

cathode ray oscilloscope CRO: An instrument based upon the cathode ray tube, which provides a visible image of one or more rapidly varying electrical quantities.

Cathode Ray Tube (CRT): An electronic device that can be used to display graphic images

and which is commonly used in data processing.

cathode ray tube CRT: An electron-beam tube in which the beam can be focused to a small cross-section on a luminescent screen and varied in both position and intensity to produce a visible pattern. Electric potentials applied to the deflection plates are used to control the position of the beam, and its movement across the screen, in a desired manner.

Cathodic Inhibitors : This is an anti corrosion solution which is applied to material to reduce the corrosion

Cathodic Protection: This is a protection technique used to prevent material from corrosion. In this material or part is made as anode

Cathodic protection: A method of preventing oxidation (rusting) of exposed metal structures, such as bridges and pipelines, by imposing between the structure and the ground a small electrical voltage that opposes the flow of electrons and that is greater than the voltage present during oxidation.

Cation: Having positive charge cation is known as ion

Cationexchange Softeners: To make soft water from hard water softeners are used to extract the calcium and magnesium from water and make it soft for further uses

Cationic: A group of ions having a positive charge moving toward the negative electrode

CATV: Community Antenna Television, known as cable television.

Catv, community antenna television. : (in LAN technology) one of the most common facilities found on broadband networks; standards exist for allocating channels on a CATV system.

causal system : causal system a system whose output does not depend on future input; the output at time t may depend only on the input signal $f(t)$. For example, the voltage measured across a particular element in a passive electric circuit does not depend upon future inputs applied to the circuit, and hence is a causal system.

causality : causality a system $H: X \rightarrow Y$, or equivalently, an operator that maps inputs from the extended space X into outputs from the same space where the output at time t is not a function of future inputs. This can be expressed using truncations as follows: A system H is causal if

Cavitation: The process of filling the empty space by a solid object.

Cavitation Damage: Some damage in the cavity due to having vapor fluids that strike to the cavity while in process

Cavitation Erosion: This corrosion is due to vapor contact to cavitation.

Cavitations : The process of filling the empty space by a solid object.

Cavity: Cavity is a female hole where a male part will be filled for joining purpose. The male is called as dowel.

cavity : cavity (1) a fully enclosed, hollow conductor, in which only time-harmonic electromagnetic fields of specific frequencies (i.e., resonant frequencies) exist. Each resonant frequency is identified by a collection of numbers in conjunction with a mode designator of the transverse electric, transverse magnetic, or transverse electromagnetic type.

cavity dumping : cavity dumping fast removal of energy stored in a laser cavity by switching the effective transmission of an output coupling mirror from a low value to a high value.

cavity lifetime : cavity lifetime one of several names used to indicate the time after which the energy density of an electromagnetic field distribu-

CB: Circuit Breaker

CB: Rubber-insulated brewery cord, with weather-proof braid on each conductor. Twisted, no overall covering.

CBM: Certified Ballast Manufacturers Association

CBO: Neoprene-insulated brewery cord for use in damp locations.

CBOB: conventional gasoline blendstock for oxygenate blending

Ccir, comité consultatif international des radiocommunications. : An international consultative committee that sets international radiocommunications recommendations. Membership includes ptt's, scientific and trade associations, and private companies. Ccir is part of the international telecommunication union (a united nations treaty organization in geneva). (note. This organization has now been incorporated into the itu telecommunications standardization sector (itu-t)).

Ccitt, comité consultatif internationale de télégraphique et téléphonique. : An international consultative committee that sets international communications recommendations, which are frequently adopted as standards, develops interface, modem and data network recommendations (see following table and selected entries - such as v.22, v.27 and x.25). Membership includes ptt's, scientific and trade associations, and private companies. Ccitt is part of the international telecommunication union (a united nations treaty organization in geneva). (note: this organization has now been incorporated into the itu telecommunications standardization sector (itu-t)).

Cctv, closed-circuit television. : (in lan technology) one of the many services often found on broadband networks.

Ccu, communications control unit.: (in ibm 3270 systems) a communications computer, often a minicomputer associated with a host mainframe computer. It may perform communications protocol control, message handling, code conversion, error control, and application functions.

Cd, carrier detect. : An rs-232 control signal (on pin 8) which indicates that the local modem is receiving a signal from the remote modem. Also called received line signal detector (rlsd) and data carrier detect (dcd).

CDD: See Cooling Degree Days.

CDMA: Code Division Multiple Access. CMDA is a technique used mainly with personal communications devices such as mobile phones that digitizes the conversation and tags it with a special frequency code. The data is then scattered across the frequency band. T

Cdma. : Code division multiple access. Simultaneous reception by a satellite transponder of multiple signals overlapping in frequency and time, each uniquely identified by a discrete modulation code, making the whole bandwidth available to each user all of the time. Each access uses direct sequence spread spectrum modulation and a different pseudo-random spreading and de-spreading sequence or code. Used with digital signalling only

CDR: clock and data recovery

C-element : C-element a circuit used in an asyn-chronous as an interconnect circuit. The function of this circuit is to facilitate the handshaking communication protocol between two functional blocks.

Cell: A small, fixed-size data unit; also, in cellular telephony, a geographical area served by a cell office.

Cell: The basic unit of a photovoltaic system.

Cell (Battery): An electrochemical device composed of positive and negative plates, separator, and electrolyte which is capable of storing electrical energy.

Cell (Photovoltaic): See "Photovoltaic Cell".

Cell (Photovoltaic): The cell which converts the solar power of sun into the electric energy are known as photovoltaic cells or solar cells.

Cell barrier: A very thin region of static electric charge along the interface of the positive and negative layers in a photovoltaic cell. The barrier inhibits the movement of electrons from one layer to the other, so that higher-energy electrons from one side diffuse preferentially through it in one direction, creating a current and thus a voltage across the cell. Also called depletion zone, cell junction, or space charge.

Cell delay variation (CDV): In ATM, the difference between the CTD maximum and the CTD minimum.

Cell error ratio (CER): In ATM, the fraction of cells lost during transmission.

Cell junction: The area of immediate contact between two layers (positive and negative) of a photovoltaic cell. The junction lies at the center of the cell barrier or depletion zone.

Cell network: A network using the cell as its basic data unit.

Cell relay: A communication technology using a fixed size data unit as the packet; used by ATM.

Cell transfer delay: In ATM, the average time needed for a cell to travel from source to destination.

Cell variation delay tolerance (CVDT): In ATM, a measure of the variation in cell transmission times.

Cell Voltage (Battery): See "Nominal Voltage (Battery)".

Cell Voltage (Battery): the voltage of a single cell in any battery is called cell voltage. Nominal voltage of lithium-ion is 3.60V/cell.

Cell : A device that transforms one form of energy into electrical energy. An example would be a chemical dry cell commonly used in flashlights (D, C, AA, AAA) and other electric devices. These are often referred to as batteries.

Cell-Reversal (Battery): Reversing of polarity within a cell of a multicell battery due to over discharge.

Cells: Refers to the un-encapsulated semi-conductor components of the module that convert the solar energy to electricity.

Cells to OEM (non-PV): Cells shipped to non-photovoltaic original equipment manufacturers such as boat manufacturers, car manufacturers, etc.

Cellular telephony: A wireless communication technique in which an area is divided into cells. A cell is served by a transmitter.

Cellular. : A technique used in mobile radio telephony to use the same radio spectrum many times in one network. Low power radio transmitters are used to cover a limited area or "cell" such that the frequencies in use can be re-used in other parts of the network.

celsius: 0 Degrees celsius is an international thermometric scale on which the interval between the triple point of water and the boiling point of water is divided into 99.99 degrees with 0.01 °C representing the triple point and 100 °C the boiling point. Celsius degrees are the same size as kelvin but the zero point is shifted to the triple point of water, minus 0.01 K. (0

◆C = 273.15 K). Note The thermodynamic temperature of the triple point of water is 273.16 K

Celsius Temperature: Celsius is centigrade it's a unit of measuring the temperature in degree unit.

Celsius Temperature Scale: Temperature scale is device from where we get the temperature in degree, on that scale degree is printed.

CEMA: This is the term used for conversion of units, from Celsius to Fahrenheit

Cen/cenelec. : Cen(comité europeene de normalisation electrotechnique) are two official european standards organisations responsible for standardisation in the field of information technology. Cen and cenelec are effectively the european subsets of the members of iso and the international electrotechnical commission (iec) respectively.

CENELEC: An acronym for the European Committee for Electromechanical Standardization. A European standard that allows retrofitting of devices that are of Cenelec standard. They have same dimensions, mounting capabilities, and sensing ranges.

Census division: Any of nine geographic areas of the United States as defined by the U.S. Department of Commerce, Bureau of the Census. The divisions, each consisting of several States, are defined as follows

Census Region: Any of four geographic areas of the United States as defined by the U.S. Department of Commerce, Bureau of the Census. The Regions, each consisting of various States selected according to population size and physical location, are defined as follows

Census Region/division: An hierarchical organization of the according to geographic areas and sub-areas as follows

Center Buckle: The uniter which hold in center of ballet or rod is called as center buckle

Center Drill: drill is used to drill hole in metal of wood. Center drilled having tip(cutting edge) on both side

Center Gage: Center gage is used to check the angle of cutting edge,

Center Head: It's a measuring device, which is used to check the center of cutting material. A scale is mounted In the center and clamp on the other end

Centering Arms: The arm is used to locate the material to the position for cutting process

Centering Marks: Marks are placed for accurate centering of job to machine

centi (c): Decimal sub-multiple prefix corresponding to one-hundredth or 10⁻². This is not a preferred suffix.

centigrade: Older name for celsius. (see celsius)

Central Appalachian Region: Consists of Eastern Kentucky, Virginia, Southern West Virginia, and the Tennessee counties of Anderson, Campbell, Claiborne, Cumberland, Fentress, Morgan, Overton, Pickett, Putnam, Roane, and Scott.

Central chiller: Any centrally located air conditioning system that produces chilled water in order to cool air. The chilled water or cold air is then distributed throughout the building, using pipes or air ducts or both. These systems are also commonly known as "chillers," "centrifugal chillers," "reciprocating chillers," or "absorption chillers." Chillers are generally located in or just outside the building they serve. Buildings receiving district chilled water are served by chillers located at central physical plants.

Central cooling: Cooling of an entire building with a refrigeration unit to condition the air. Typically central chillers and duct work are present in the centrally cooled building.

Central office.: The building where common carriers terminate customer circuits and where the switching equipment that interconnects those circuits is located. Sometimes also known as the central exchange - or just simply as exchange.

Central physical plant: A plant owned by, and on the grounds of, a multibuilding facility that provides district heating, district cooling, or electricity to other buildings on the same facility. To qualify as a central plant it must provide district heat, district chilled water, or electricity to at least one other building. The central physical plant may be by itself in a separate building or may be located in a building where other activities occur.

Central power: The generation of electricity in large power plants with distribution through a network of transmission lines (grid) for sale to a number of users. Opposite of distributed power.

central processing unit: [see CPU]

Central Processing Unit (CPU): Microprocessor that functions as the primary computational Obtain of a PC or other computer-based device.

Central processing unit (CPU): The part of a computer that performs the arithmetic, logic, and control functions.

Central warm air furnace: A type of space heating equipment where a central combustor or resistance unit generally using gas, fuel oil, or electricity provides warm air through ducts leading to the various rooms. Heat pumps are not included in this category. A forced air furnace is one in which a fan is used to force the air through the ducts. In a gravity furnace, air is circulated by gravity, relying on the natural flow of warm air up and cold air down; the warm air rises through ducts and the cold air falls through ducts that return it to the furnace to be reheated and this completes the circulation cycle.

Centralized water heating system: Equipment, to heat and store water for other than space heating purposes, which provides hot water from a single location for distribution throughout a building. A residential type tank water heater is a good example of a centralized water heater.

centre of gravity: The centre of gravity of a body is the fixed point through which the resultant force due to the Earth's attraction upon it always passes, irrespective of the position of the body.

Centres of excellence (coe). : Coe are institutions that possess special knowledge or expertise in a particular area of concern and that are incorporated into the collaborative environment to facilitate development of the products that support sjfhq and joint task force functions and operations – academia, industry, and banking.

Centrifugal Compressor: The energy is transferred by impeller which is driven by centrifugal motor,

Centrifugal Fans: The fan rotate from a centrifugal motor is called as centrifugal fan.

Centrifugal Force: The force which is result of a centrifugal movement of impeller

centrifugal force: The outward force acting on a body rotating in a circle round a central point.

Centrifugal Mills: To mill or mix material centrifugal mill is used, a grinder or juicer is an example of centrifugal mills

Centrifugal Polishing: To polish the surface of rough material by centrifugal flow of polishing material to rough surface

Centrifugal Pump: The pump is used to Increase the pressure of fluid or feed the fluid with high speed. Centrifugal pump is having one centrifugal pump, impeller etc.

Centripetal Force: The force makes a path from center to its periphery. Direction is fixed and motion is toward the center

centripetal force: The radial force imposed by the restraining system, necessary to keep the body moving in a circular path. [Note the centrifugal force and the centripetal force are equal and opposite].

Centronics. : Printer manufacturer that set the defacto interconnection standards for parallel printers, using a 36-pin, byte-wide connector.

cept. : Conférence europeene des adminstrations des postes et des télécommunications (cept). The european conference of posts and telecommunication administrations. Cept is an association of european pt's (postal telephone and telegraph administrations) and network operators from 43 countries.

ceramic: pertaining to products involving the use of clay or other silicates.

Ceramic: Pertaining to a product made from inorganic, nonmetallic materials fused or fired at high temperatures; used as an insulation in cables when extremely high temperatures are to be encountered.

Ceramic Insulation: This is high temperature insulation. Insulation material is wool so that its called ceramic insulation

Ceramic Tools: Tools are used by fine arts student or clay modeler made by wood or ceramic.

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

Certificate: A type of permit for public convenience and necessity issued by a utility commission, which authorizes a utility or regulated company to engage in business, construct facilities, provide some services, or abandon service.

Certificate of Compliance (C of C): A certificate which is normally generated by a quality control department which shows that the product being shipped meets Customer's specifications.

Certificate policy. : A named set of rules that indicates the applicability of a certificate to a particular community and/or class of application with common security requirements. For example, a particular certificate policy might indicate applicability of a type of certificate to the authentication of electronic data interchange transaction for the trading of good within a given price range.

Certificate requirement: The maximum annual volume allowed for sales to resale or direct sale customers under certificate authorizations by the Federal Energy Regulatory Commission.

Certificate revocation list (crl). : A signed list indicating a set of certificates that are no longer considered valid by the certificate issuer. In addition to the generic term crl, some specific crl types are defined in crls that cover particular scope.

Certificate serial number. : An integer value, unique within the issuing authority, which is unambiguously associated with a certificate issued by that ca.

Certificate user. : An entity that needs to know, which certainty, the public key of another entity.

Certificate validation. : The process of ensuring that a certificate was valid at a given time,

including possible construction and processing of a certification path, and ensuring that all certificates in that path were valid (i.e. Were not expired or revoked) at that given time.

Certificate-using system. : An implementation of those functions defined that are used by a certificate-user.

Certification authority (ca). : An authority trusted by one or more users to create and assign public-key certificates. Optionally the certification authority may create the users' keys.

Certification authority revocation list (carl). : A revocation list containing a list of public-key certificates issued to certification authorities that are no longer considered valid by the certificate issuer.

Certification path. : An ordered sequence of certificates of objects in the dit which, together with the public key of the initial object in the path, can be processed to obtain that of the final object in the path.

Certification. : The formal technical evaluation of security features and other safeguards of a cis automated information system (ais). Certification supports the accreditation process and establishes the extent to which a particular ais design and implementation meet a set of specified security requirements.

Cesspool: An underground reservoir for liquid waste, typically household sewage.

ceylon electricity board CEB: A body corporte dulyconstituted by Act No. 17 of 1969 of the Democratic Socialist Republic of Sri Lanka.

CF: Cubic Foot

CF: Fixture wire, heat resistant, with flame-retardant, moisture-resistant impregnated cotton insulation. With or without plain or fancy cotton or rayon braid. 300V, 90°C

CFC: See Chlorofluorocarbon.

CFC: Two or three CF type wire twisted together without overall covering. Color coded. 300V, 90°C

CFL: [see compact fluorescent lamp]

CFPD: Two or three CF type wires twisted together with overall braid. Color coded. 300V, 90°C

CFPO: Two CF type wires laid parallel with overall braid. Color coded. 300V, 90°C

CFS: Cubic Feet per Second

cgs system, centimetre-gram-second system: A decimal system which is an earlier form of the metric system.

CH₂H₂: Acetylene

CH₄: Methane.

CH₄ : Methane

chaff. : Strips of frequency-cut metal foil, wire or metallised glass fibre used to reflect electromagnetic energy, usually dispensed by shells or rockets as a radar countermeasure.

chain reaction: Any self-sustaining molecular or nuclear reaction, the products of which contribute to the propagation of the reaction.

Chain reaction: A reaction that stimulates its own repetition, in particular where the neutrons originating from nuclear fission cause an ongoing series of fission reactions.

Chain Sprockets: This is teethed wheel. Common use of sprockets is at cycle chain gear.

Chained dollars: A measure used to express real prices. Real prices are those that have been adjusted to remove the effect of changes in the purchasing power of the dollar; they usually

reflect buying power relative to a reference year. Prior to 1996, real prices were expressed in constant dollars, a measure based on the weights of goods and services in a single year, usually a recent year. In 1996, the U.S. Department of Commerce introduced the chained-dollar measure. The new measure is based on the average weights of goods and services in successive pairs of years. It is "chained" because the second year in each pair, with its weights, becomes the first year of the next pair. The advantage of using the chained-dollar measure is that it is more closely related to any given period covered and is therefore subject to less distortion over time.

Challenge and reply (1). : In authentication, a procedure by means of a prearranged system whereby one transmitter requests authentication of another transmitter (the challenge) and the latter by a proper reply establishes its authentication (the reply).

Challenge and reply (2). : In establishing identity, the challenge and the reply is a prearranged method whereby one station identifies itself and requests the identity of another (the challenge) and the latter identifies itself (the reply).

Challenge Handshake Authentication Protocol (CHAP): In PPP, a three-way handshaking protocol used for authentication.

Challenge. : Any process carried out by one unit or person with the objective of ascertaining the friendly or hostile character or the identity of another. The answer to a challenge is a reply.

Chamfer: This term is used in mechanical industry. Chamfer is like a flat face, which is, provide on the edge of any component according to requirement.

Change Of State: This is a chemical industry used terms mainly used to define the change in the form of substance like solid to liquid or liquid to vapor

Channel: A communications pathway.

channel: In television, a portion of the RF spectrum 6 MHz wide which carries the audio and video carriers of the television signal.

Channel: The complete communications path between telecommunications closet equipment and workstation equipment which includes cross-connects and patch.

Channel (1). : (ccitt standard) a means of 1-way transmission. Compare with circuit.

Channel (2). : (tariff and common usage) as used in tariffs, a path for electrical transmission between 2 or more points without common carrier-provided terminal equipment such as a local connection to dte. Also called circuit, line, data link path, or facility.

Channel (3). : (in all ibm host systems) a high-speed data link connecting the cpu and its peripheral devices. See also block-multiplexor channel, multiplexor channel, and selector channel.

Channel (frequency). : Part of the frequency spectrum intended to be used for the transmission of signals and which may be defined by two specified limits, or by its centre frequency and the associated bandwidth, or by an equivalent indication. Note 1 a frequency channel may be time-shared in order to allow communication in both directions by simplex operation. Note 2 the use of the term channel to mean circuit is depreciated.

Channel (transmission): A transmission path suitable for a specific mode. Note 1 several channels may share a common path; for example, each channel is allocated a particular frequency band or a particular time slot. note 2 in some countries the term 'communications channel' or its abbreviation 'channel' is also used to mean 'telecommunications circuit' i.e., to

encompass the two directions of transmission. This usage is deprecated. Note 3 a transmission channel may be qualified by the nature of the transmitted signal, or by its bandwidth, or by its rare bit rate. Examples: telephone channel, data channel, 10 mhz channel, 34mbit/s channel.

Channel Associated Signaling: A method of signaling in telephone networks, uses routing information to direct the payload of voice or data to its destination

Channel availability and receipt broadcast - carb. : A facility utilised by the rn, which provides demand access availability to ship-borne terminals working through the cdma pathways, together with a receipted broadcast facility.

Channel designation (message relay). : One or more letters used to identify a station in conjunction with a channel number.

Channel identifier (cid). : Three letters which identify a specific channel between two stations.

Channel interface. : See channel and interface.

Channel letter (message relay). : A letter assigned to identify a channel when two or more channels are maintained between two stations.

Channel loopback. : A diagnostic test that forms the loop at the multiplexors channel interface (refer to loopback).

Channel number (1). : Engineering term. A number allotted to identify a particular channel of a circuit or system.

Channel number (2). : Message relay. A combination of letters and figures identifying a station, a channel and a transmission.

Channel restoration. : The repair or reconnection of an existing channel.

Channel sequence number (csn). : Three numerical characters which serve to sequentially number each transmission over a particular channel and which starts at 001 daily and is not to exceed 999.

Channeling: This is the myth or belief that the spirit has taken the body of any person for wisdom.

Character set. : A collection of characters, such as ascii or ebcdic used to represent data in a system. Usually includes special symbols and control functions. Often synonymous with code.

Character. : Letter, number, punctuation, or other symbol contained in a message. See also control character.

Characteristic Angle: The angle between the vectors representing two of the energizing quantities applied to a relay used for the declaration of the performance.

Characteristic Angle: The angle at which a given mode propagates down an optical fiber

Characteristic Curve: A plot or curve displaying the operating values of the characteristic quantities corresponding to various values or combinations of the energizing quantities.

Characteristic Curve: the figure which shows the changes and interrelationship between two variables.

Characteristic Impedance: The impedance that when connected to the output terminals of a transmission line of any length, makes the line appear infinitely long. The ratio of voltage to current at every point along a transmission line on which there are no standing waves.

Characteristic Impedance Ratio (C.I.R.): The maximum value of the system impedance ratio for which the relay performance remains within the prescribed limits of accuracy.

Characteristics, military.: Those characteristics of equipment upon which its ability to perform desired military functions depend. Military characteristics include physical and operational characteristics but not technical details.

Characterization: Sampling, monitoring, and analysis activities to determine the extent and nature of contamination at a facility or site. Characterization provides the necessary technical information to develop, screen, analyze, and select appropriate clean-up techniques.

Character-level encryption: A conventional encryption method in which the character is the unit of encryption.

Character-oriented protocol: A protocol in which the frame or packet is interpreted as a series of characters.

Character-oriented. : Used to describe communications protocols (such as bsc) in which control information is coded in character-length fields. Contrast with bit-oriented.

Charcoal Tin Plate: Tin plate is used in chemical industry, as base material. This is cheap for use.

Charge: Two types of electric charges are there one is positive and other is negative. This is the physical property of ion that it having the negative or positive charge.

charge: (see electric charge)

Charge: The electric charge is a fundamental conserved property of some subatomic particles, which determines their electromagnetic interaction.

Charge (Battery): The conversion of electrical energy from an external source, into chemical energy within a cell or battery.

Charge capacity: The input (feed) capacity of the refinery processing facilities.

Charge carrier: A free and mobile conduction electron or hole in a semiconductor.

Charge Controller: An electronic device which regulates the voltage applied to a battery or battery bank.

Charge Pump: the DC to DC convertor that use capacitor as energy storage element to create different output lower or higher voltage output.

Charge Rate (Battery): The rate at which current is applied to a secondary cell or battery to restore its capacity.

Charge Termination Method: The method or system which terminate the charging cycle.

Charge-Retention (Battery): The tendency of a charges cell or battery to resist selfdischarge.

Charging Board: Board is used to transfer power to other part. Mainly used to transfer electrical energy to charge other equipment.

Charging Whistle: The whistle is used with charging board when the charging is complete so the whistle is whistled to give the notice of full charging.

Charpy Impact Test: The impact test is done to test the strength of material when the sudden impact or load put on material.

Chasing Threads: To clean the teeth of threaded bolt by tapping tool is called as chasing

Chateaugay:

Chatter: Chatter is a type of talking or informal chatting. And also a series of high low pitch of sound

Chatter Marks: This is mark on the rough surface of any material, the series of the marks in the shape of sharp peeks.

Chattering: Chatter is a type of talking or informal chatting. And also a series of high low pitch of sound

Check Protection System: An auxiliary protection system intended to prevent tripping due to inadvertent operation of the main protection system.

Check Valve: This is two way valve in the shape of T. use to flow the fluids in one direction and at same time flow is closed for other direction

Check Weigh Scales: Scale which is used on the screen of the weighing machine to show the weight of the part.

Checking: The terms related to inspect, test something

Checksum: A field is used for error detection. It is formed by adding bit streams using one's complement arithmetic and then complementing the result.

Chelate: It's a chemical compound, which is used to compound material.

Chemical Analysis: Chemical analysis is the process of investigating the chemical composition of material or solution. A chemical analysis of a compound will be done to determine the individual components, their concentrations, and the properties of the compound. For example, the owner of a pool may perform a chemical analysis to determine if chlorine needs to be added. Likewise, scientists may perform a chemical analysis on a lake or river to determine levels of pollutants and determine the health of the ecosystem and the safety of the water.

Chemical Feed Pump: A chemical feed pump is a specialized pump designed to accurately and safely delivery chemicals in a piping system. These pumps are characterized by properties such as chemical resistant coatings that are resistive to acids and corrosion. These pumps may also include volume flow control and metering capabilities for the accurate delivery of specific quantities of chemicals.

Chemical Milling: Removing metal stock by controlled selective chemical etching.

Chemical Polishing: Improving the specular reflectivity of a metal surface by chemical treatment.

chemical reaction: The interaction of two or more substances resulting in chemical changes in them.

Chemical Resistant Tubing: Tubing refers to sections of long, hollow, flexible cylinders used to move substances, usually fluids or gases. Chemical resistance is most often achieved in tubing by way of material selection, with polyvinylchloride (PVC), silicon rubber, and other plastic polymers being used most often. The chemical resistance of tubing is not the same for all chemicals and is dependent on other factors such as the concentration of the chemicals, temperature, and pressure.

Chemical separation: A process for extracting uranium and plutonium from dissolved spent nuclear fuel and irradiated targets. The fission products that are left behind are high-level waste. Chemical separation is also known as reprocessing.

Chemical Transfer Pumps: Chemical transfer pumps are used to move hazardous chemicals or waste solutions from one place to another. Depending on the specific application, the pump will make use of chemical or acid resistant components and coatings in order to ensure long life of the pump. The pump can be any type of pump, including positive displacement and fluid dynamic pumps, depending on the size and requirements of the pumping application.

Chemical Treatment: 1) (Chem. Treat) A customer specified rust inhibitor applied to the

coated product. 2) A passivating chemical treatment normally applied to the steel surface to control oxide formation and growth.

Chemical vapor deposition (CVD): A method of depositing thin semiconductor films. With this method, a substrate is exposed to one or more vaporized compounds, one or more of which contain desirable constituents. A chemical reaction is initiated, at or near the substrate surface, to produce the desired material that will condense on the substrate.

Chemically Brightened: A chemical addition made to the plating bath that results in a coating with a bright appearance as opposed to the mechanically brightened surface appearance .

Chemistries: The chemical composition of steel indicating the amount of carbon, manganese, sulfur, phosphorous and a host of other elements.

Cherry Picker: An aerial lift truck. Also see Bucket Truck.

Cherry Picker: this is hydraulic lift with bucket type platform used to work at height.

Chill: A metal insert in the sand mold used to produce local chilling and equalize rate of solidification throughout the casting.

chip: The finished IC (integrated circuit) is commonly known as a chip.

Chip: Chip may be any piece of wood or any metal.

Chip Breaker: A small groove ground back of the cutting edge on the top of a cutting tool to keep the chips short.

Chipping: A method for removing seams and other surface defects with chisel or gouge so that such defects will not be worked into the finished product. Chipping is often employed also to remove metal that is excessive but not defective. Removal of defects by gas cutting is known as deseaming or scarfing.

Chlorinated Polyethylene: Chlorinated Polyethylene. CPE, a thermoplastic compound, is used to jacket certain types of power cable.

Chlorinated Polyethylene: This is type of resin and elastomers having excellent physical and mechanical properties.

Chlorofluorocarbon: A family of chemicals composed primarily of carbon, hydrogen, chlorine, and fluorine whose principal applications are that of refrigerants and industrial cleansers and whose principal drawback is the tendency to destroy the Earth's protective ozone layer.

Chlorofluorocarbon (CFC): Any of various compounds consisting of carbon, hydrogen, chlorine, and fluorine used as refrigerants. CFCs are now thought to be harmful to the earth's atmosphere.

choke: A coil of low resistance and high inductance used in electrical circuits to pass low frequency or direct components while suppressing (or choking) the higher frequency undesirable alternating currents.

Choke: A device used to filter RFI noise generated by dimmers or other electronic switching devices.

Choker: A Sling.

Chop: A die forging defect; metal sheared from a vertical surface and spread by the die over an adjoining horizontal surface.

chop mode: A vertical mode of operation for dual-trace oscilloscopes in which the display is switched between the two channels at some fixed rate much less than the sweep time.

chopped waveform: The standard surge waveform applied is suddenly made zero (chopped)

at a predefined time to simulate the surge waveform with flashover.

CHP: Combined Heat and Power

Christmas tree: The valves and fittings installed at the top of a gas or oil well to control and direct the flow of well fluids.

Chromadizing (Chromodizing, Chromatizing): Forming an acid surface to improve paint adhesion on aluminum or aluminum alloys, mainly aircraft skins, by treatment with a solution of chromic acid.

Chromaticity: The aspect of color that includes consideration of its dominant wavelength and purity

Chrominance: The signals used in video system to provide the color information of the image .

Chromium Nickel Steel: Steel usually made by the electric furnace process in which chromium and nickel participate as alloying elements. The stainless steel of 18% chromium and 8% nickel are the better known of the chromium nickel types.

Chromizing: A surface treatment at elevated temperature, generally carried out in pack, vapor, or salt bath, in which an alloy is formed by the inward diffusion of chromium into the base metal.

Chuck: A device on a machine tool to hold the workpiece or a cutting tool.

Chuck, Universal : A chuck whose jaws are so arranged that they are all moved together at the same rate by a special wrench.

CIF (cargo, insurance and freight): CIF refers to cargos for which the seller pays for the transportation and insurance up to the port of destination.

CIF (cost, insurance, freight): This term refers to a type of sale in which the buyer of the product agrees to pay a unit price that includes the f.o.b. value of the product at the point of origin plus all costs of insurance and transportation. This type of a transaction differs from a "delivered" purchase, in that the buyer accepts the quantity as determined at the loading port (as certified by the Bill of Lading and Quality Report) rather than pay based on the quantity and quality ascertained at the unloading port. It is similar to the terms of an f.o.b. sale, except that the seller, as a service for which he is compensated, arranges for transportation and insurance.

Cifax (1). : The cryptography of facsimile signals.

cifax (2). : Encrypted facsimile signals.

Cigarette Knife Steel: Hardened, tempered and bright polished, 1.25 Carbon content Chromium .15. Accurate flatness necessary and a high hardness with Rockwell C 51 to 53. Usual sizes are 4 3/4 wide and 6 wide x .004 to .010.

Cipher device. : See cipher equipment.

Cipher equipment.: Equipment which converts plain text to cipher and vice versa; generally, the term cipher device is used to describe manually-operated equipment and the term "cipher machine" is used to describe equipment requiring an external source of power.

Cipher machine. : See cipher equipment.

Cipher system. : Any cryptosystem which, by means of a key, converts, unit by unit, plain or encoded text or signals into unintelligible form and vice versa.

Cipher text: The encrypted data.

Cipher, combat. : See code, combat.

Cipher, off-line. : See off-line cipher.

Cipher, on-line. : The use of crypto equipment that is directly connected to a signal line, making encryption and transmission (or reception and decryption, or both together) a single continuous process.

Ciphony (1). : The cryptography of telephone communications.

Ciphony (2). : Enciphered speech signals.

CIR: Characteristic Impedance Ratio

Circline: A four contact, double-ended lampholder for use with tubular, circular, fluorescent lamps.

Circored(R): WHAT A gas based process developed by Lurgi Metallurgie in Germany to produce DRI or HBI (see Direct Reduced Iron and Hot Briquetted Iron). HOW The two stage method yields fines with a 93% iron content. Iron ore fines pass first through a circulating fluidized bed reactor, and subsequently through a bubbling fluidized bed reactor.

Circuit: A circuit protection device that opens the circuit automatically when an overload or short circuit occurs.

Circuit: A conductor or a system of conductors through which electric current flows.

Circuit: A device that can be used to manually open or close a circuit, and to automatically open a circuit at a predetermined level of over current without damage to itself.

circuit: An electrical circuit is the complete path traversed by an electric current.

Circuit: A conductor or system of conductors through which an electric current is intended to flow.

Circuit: Circuit may be a combination of different components like resistors, batteries, inductors etc.with application of voltage and current. It is a close loop.

Circuit (1). : (in data communications) a means of 2-way communications between 2 points, consisting of transmit and receive channels.

Circuit (2). : (in electronic design) one or more components that act together to perform one or more functions.

Circuit (3). : Communications term. An electronic path between two or more points capable of providing a number of channels.

Circuit (4). : Engineering term. A number of conductors connected together for the purpose of carrying an electrical current.

Circuit (Electric): A conductive path over which an electrical charge can flow.

Circuit (telecommunication). : A telecommunication facility to transmit signals between message source and message link by electric, electromagnetic, acoustic or visual means.

Circuit breaker: An arrangement or connection of circuit devices and components to perform a specific objective. In the simplest form it would require an energy source, a load to transform the energy into the desired task, and conductors to connect the source to the load. In most applications a control device (switch) would be included and may also include a protective device. Common example of a simple circuit would be a flashlight.

Circuit Breaker: The highest circuit voltage to earth on which a circuit of a transducer may be used and which determines its voltage test.

circuit breaker: A mechanical switching device capable of making, carrying, and breaking currents under normal conditions. Also making, carrying for a specific time, and automatically breaking currents under specified abnormal circuit conditions, such as those of

short circuit. It is usually required to operate infrequently although some types are suitable for frequent operation.

Circuit Breaker: Circuit breaker may be automatic or manual which protect the system to damage from any type of overload and short circuit. MCB is example.

Circuit Breaker: A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined overcurrent without injury to itself when properly applied within its rating.

Circuit discipline. : The component of transmission security which includes the proper use of communications equipment, the adherence to the prescribed frequencies and operating procedure, remedial action, net control, monitoring and training.

Circuit Insulation Voltage: CircuitSwitchers are multipurpose switching and protection devices. Often used for switching and protection of transformers, single and backto back shunt capacitor banks, reactors, lines, and cables. They can close, carry, and interrupt fault currents a

Circuit Interrupter: A circuit interrupter is a non automatic manually operated device designed to open, under abnormal conditions, a current-carrying circuit without injury to itself.

circuit protective conductor cpc : A protective conductor connecting exposed conductive parts of equipment to the main earthing terminal.

Circuit restoration. : The process by which a communications circuit supplier provides a circuit path between two user stations after disruption or loss of the existing circuit path, in accordance with pre-planned procedures and priorities.

Circuit Switchers: The greatest rootmeansquare (effective) difference of potential between any two conductors of the circuit.

Circuit Switchers: Circuit switchers a a set of switches for redirecting current in a substation. Circuit switchers provide equipment protection for transformers, lines, cables, and capacitor banks. They also are used to energize and deenergize capacitor banks and other circuits.

Circuit Switchers: it is a control unit which control the different circuits. It switch the different circuits for joint operation of two or more switches.

Circuit switching: A switching technology that establishes an electrical connection between stations using a dedicated path.

Circuit Voltage: A conductive path over which an electric charge may flow.

Circuit Voltage: the voltage present in a circuit is called circuit voltage.

circuit : An assembly of electrical equipment supplied from the same origin and protected against overcurrent by the same protective device(s).

Circuit, approved. : A circuit which has been authorised by a responsible authority for the transmission in plain language of information of a specific security classification.

Circuit, commanders vital. : A circuit required in order to maintain the absolute minimum of communication for a commander in order that he can carry out his operational mission under all circumstances. Such a circuit must be as secure as possible and with an alternative routing capable of immediate activation without further orders in the event of a breakdown likely to exceed four hours.

circuit, conference. : A circuit permitting simultaneous communications between two or

more stations for conference purposes. All stations can originate and receive messages.

Circuit, dedicated. : A circuit provided for the sole use of certain specified users to serve a pre-assigned purpose.

Circuit, engineering.: An auxiliary circuit or channel (radio or wire) for use by operating and/or maintenance personnel for communications incident to the establishment, operation, maintenance and control of communication facilities. (an engineering/maintenance circuit includes the functions of an "order wire").

Circuit, internal. : A circuit the whole length of which lies within the boundaries of one nation.

Circuit, international. : A circuit the routing or terminals of which lie within more than one nation.

Circuit, permanent. : A circuit which is permanently provided and used in peacetime and which normally continues to be used in wartime.

Circuit, safety. : A circuit which for operational reasons has been guarded against failure by the provision of an immediate restoration capability.

Circuit, temporary.: A circuit which is required for a limited period to meet a special requirement.

Circuit, trunk. : A circuit directly connecting two distant exchanges.

Circuit-mile: The total length in miles of separate circuits regardless of the number of conductors used per circuit.

Circuit-switching. : A technique in which physical circuits (as opposed to virtual circuits) are transferred (switched) to complete connections. Contrast with packet-switched networks.

Circular Connectors: A circular connector is a type of electrical plug designed to delivery one or multiple signals. Circular connectors are comprised of a male and female part, with the male component containing metal pins or prongs and the female component containing the receiving holes for the connectors. The connector is often notched to ensure the plugs can only be connected in the proper orientation.

circular mil: A unit of area used in measuring the cross section of fine wire. 1 circular mil corresponds to the area of a circle whose diameter is equal to one-thousandth of an inch. 1 circular mil = 0.506710^{-9} m²

Circular Mil: A measurement used in determining the area of a wire. The area of a circle one one thousandth inches in diameter.

circularly polarised light: Light which can be resolved into two vibrations lying in planes at right angles, of equal amplitude and frequency and differing in phase by 90°.

Circular-Mil (cmil): The area of a circle with a diameter of one mil (1/1000 inch), used to describe the crosssectional area of a conductor. One cmil equals approximately 0.0000008 square inches.

Circular-Mil (cmil): It is the unit of area .

Circumferences: Bands wrapped around the outside of the coil.

Circumscribing Circle: The smallest circle that will completely enclose the cross section of an extruded shape.

Cirvis. : Communications instructions for reporting vital intelligence sightings.

Citygate: A point or measuring station at which a distributing gas utility receives gas from a natural gas pipeline company or transmission system.

CIV : customs import value

Clad Metal: A composite metal containing two or three layers that have been bonded together. The bonding may have been accomplished by co rolling, welding, heavy chemical deposition or heavy electroplating.

Cladding: Glass or plastic surrounding the core of an optical fiber the optical density of the cladding must be less than that of core.

Cladding: The metal tubes containing oxide fuel pellets in a reactor core.

Cladding: A method of applying a layer of metal over another metal, whereby, the junction of the two metals is continuously welded.

Clamp Meters: A clamp meter is an electrical measurement device designed to allow for the safe measurement of electrical current around a conductor. A spring level is used to open a set of jaws, allowing the jaws to be placed around the conductor of interest. The current through the conductor creates a magnetic field which can be measured by the winding in the jaws of the clamp meter. The current is then read on a meter in the handle of the device.

clamping level: The voltage point at which a surge protector begins to limit surges.

Clarification Tank: A water filled settling tank used to remove particulate from the water off the scrubbers at the Blast Furnace.

Clarifiers: A unit that removes solids for clarification of the raw river water. It is aided by injecting polyelectrolyte and ferric for coagulation, caustic for stabilization of pH, and chlorine for removal of bacteria. Sludge is discharged and clear effluent sent on through the water plant.

Class 1 Surface : A class of cold rolled steel processed to meet requirements for controlled surface texture, flatness, and temper requirements. Produced for exposed applications.

Class CC Fuse: A small current-limiting rejection type fuse for control circuits. Rated 0-30 amperes, 600 volts and 200,000 amperes interrupting rating.

Class G Fuse: A small current-limiting fuse which come in four sizes 0-15A, 20A, 25-30A and 35-60A which are non-interchangeable. Rated 480 volts with a 100,000 ampere interrupting rating.

Class H Fuse: Any 250 or 600 volt "standard" dimension fuse, either renewable or non-renewable which has a 10,000 ampere interrupting rating.

class I equipment: Equipment in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in that means are provided for the connection of the equipment to the protective earth conductor in the fixed wiring of the installation in such a way that accessible metal parts cannot become live in the event of a failure of basic insulation.

class II equipment: Equipment in which protection against electric shock does not rely on basic insulation only, but which additional safety precautions such as double insulation or reinforced insulation are provided, there being no provision for protective earthing or reliance upon installation conditions.

class III equipment: Equipment in which protection against electric shock relies on supply at SELV and in which voltages higher than those of SELV are not generated.

Class Index: A number which designates an accuracy class.

Class J Fuse: A 600 volt non-interchangeable current-limiting fuse of small, unique dimensions. Available in ratings 0-600 amperes with a 200,000 ampere interrupting rating.

Class K Fuse: A 250 or 600 volt standard dimension fuse (no rejection feature) with an interrupting rating of 50,000 or 100,000 amperes, meeting specific I_p and I^2t limits. Available in ratings 0-600 amperes.

Class L Fuse: A 600 volt bolt-in, current limiting fuse of small, unique dimensions. Available in rating 0-600 amperes with a 200,000 ampere interrupting rating.

Class of address: The category of an IPv4 address.

Class R Fuse: A 250 or 600 volt standard dimensions fuse with a 200,000 ampere interrupting rating and a rejection feature on one terminal. They are current-limiting fuses rated 0-600 amperes.

Class rate schedule: An electric rate schedule applicable to one or more specified classes of service, groups of businesses, or customer uses.

Class T Fuse: A small, unique dimension current limiting fuse, non-interchangeable with any other fuse. Available in 300 volt and 600 volt sizes, rate 0-1200 amperes, with a 200,000 ampere interrupting rating.

Classes of service: Customers grouped by similar characteristics in order to be identified for the purpose of setting a common rate for electric service. Usually classified into groups identified as residential, commercial, industrial, and other.

Classified information. : Information related to the national interest, the compromise of which would reasonably be expected to cause injury to the national interest.

Clean Development Mechanism (CDM): A Kyoto Protocol program that enables industrialized countries to finance emissions-avoiding projects in developing countries and receive credit for reductions achieved against their own emissions limitation targets. Also see Kyoto Protocol.

Clean Out: A hole in a reservoir or tank that is normally covered with a plate that may be removed to allow cleaning of the interior of the reservoir or tank.

clean power: Electrical power which has been conditioned and/or regulated to remove electrical noise from the output power.

Cleaned coal or prepared coal: has been processed to reduce the amount of impurities present and improve the burning characteristics.

Cleaning: The process of removing scale, oxides, or lubricant acquired during heating for forging or heat treating ? from the surface of the forging. (also see Blasting, Pickling, tumbling)

Cleaning Tank: This section of the plater is used to remove dirt, oil, grease, oxides and other contaminants from the surface of material to be electroplated. A cleaning agent is used at a temperature of 180 190 degrees.

Cleanliness: For internal steel quality, a measure of the size and frequency of inclusions; for external steel surface quality, a measure of the amount of extraneous materials (such as dirt, iron particles, carbon, etc.) on the steel surface.

Clear text. : See plain language (plain text).

Clearance: (1)The gap between two mating parts; (2) the space provided between the relief of a cutting tool and the surface being cut.

Clearance (between objects): The clear distance between two objects measured surface to surface.

Clearance (for work): Authorization to perform specified work or permission to enter a

restricted area.

Clearance Angle: The angle between the rear surface of a cutting tool and the surface of the work at the point of contact.

Clearance Volume: The volume of the combustion chamber above the piston when it is at the top dead center or inner dead center is known as clearance volume. The clearance volume is generally expressed in terms of the percentage of swept volume and is given in CC.

Clearing Time: The total time needed for a protective device such as a fuse or circuit breaker to clear a fault.

Clearing Time: The total time between the beginning of the overcurrent and the final opening of the circuit at rated voltage by an overcurrent protective device. Clearing time is the total of the melting time and the arcing time.

Cleavage: Fracture of a crystal by crack propagation across a crystallographic plane of low index.

Cleavage Fracture: Fracture of a grain, or most of the grains, in a polycrystalline metal by cleavage, resulting in bright reflecting facets.

Cleavage of lateral epitaxial films for transfer (CLEFT): A process for making inexpensive GaAs photovoltaic cells in which a thin film of GaAs is grown atop a thick, single-crystal GaAs (or other suitable material) substrate and then is cleaved from the substrate and incorporated into a cell, allowing the substrate to be reused to grow more thin-film GaAs.

Cleavage Plane: A characteristic crystallographic plane or set of planes in a crystal on which cleavage fracture occurs easily.

CLF: Refer to "Current Limiting Fuse".

Client: A program that initiates communication with another program called the server.

Client: As part of a computer network, where a server is employed, this is the customer or nonserver side. When you log onto a server, from another computer, the word "Client" refers to you, your computer or your software.

Client: The piece of computer which accesses a service made available by a server.

Client server model: The model of interaction between two application programs in which a program at one end requests a service from a program at the other end

Climate change: A term used to refer to all forms of climatic inconsistency, but especially to significant change from one prevailing climatic condition to another. In some cases, "climate change" has been used synonymously with the term "global warming"; scientists, however, tend to use the term in a wider sense inclusive of natural changes in climate, including climatic cooling.

Climb milling: A method of milling in which the work table moves in the same direction as the direction of rotation of the milling center. Sometimes called down cutting or down milling.

Climbers: Hooks for climbing poles that are attached to a lineman's boots.

Clinker: Powdered cement, produced by heating a properly proportioned mixture of finely ground raw materials (calcium carbonate, silica, alumina, and iron oxide) in a kiln to a temperature of about 2,700 degrees Fahrenheit.

Clip: Metal device used to hold the ends of steel strapping (bands) together.

clock: The basic timing signal in a digital system.

Clock (1). : The timing signal used in synchronous transmission.

Clock (2). : The source of such timing signals.

Clock Hanger: A single receptacle generally recessed behind a special cover plate having a hook or other means of supporting a wall-hung clock.

Clock Throttling: decreasing the duty cycling of integrated circuit for reducing the heat generation from any system

Closed architecture. : An architecture that is compatible only with hardware and software from a single vendor. Contrast with open architecture.

Closed Center Valve: A condition where pump output is not unloaded to sump when the valve is in its center or neutral operating position.

Closed circuit: A circuit that provides a complete path for current.

Closed Circuit: Electrical circuit which provides path for flow of current.

Closed Circuit Transition: As applied to reduced voltage controllers, is a method starting by which the power to the motor is not interrupted during normal starting sequence. Open circuit transition is a method of starting in which the power to the motor is interrupted during normal starting sequence.

Closed Entry Contact: A female contact designed to prevent the entry of a pin or probing device having a cross-sectional dimension (diameter) greater than the mating pin.

Closed Loop: In a control system, a type of control that has an input signal and a feedback of the result of the input signal which is used to modulate the input signal automatically.

Closed Loop Control: Controller automatically compensates for variables, e.g. product temperature ambient temperature, conveyor speed, etc.

Close-up (flag signalling). : A flag hoist is said to be "close-up" when its top is touching the block at the top of the hoist.

Closing a Circuit: Placing the circuit in operation.

Closing Impulse Time: The time during which a closing impulse is given to the circuit breaker.

Closing Time: Referring to a circuit breaker it is the necessary time for it to close, beginning with the time of energizing of the closing circuit until contact is made in the CB.

Closing Time: it may be time of closing of any circuit

Cloud condensation nuclei: Aerosol particles that provide a platform for the condensation of water vapor, resulting in clouds with higher droplet concentrations and increased albedo.

Cluster control unit. : (in ibm 3270 systems) a device that controls the input/output operations of a group (cluster) of display stations. Also called terminal control unit.

Cluster Mill: A rolling mill where each of the two working rolls of small diameter is supported by two or more back up rolls.

Cluster.: A collection of terminals or other devices in a single location.

Clutter. : Collective term for unwanted echoes on a radar display.

CMA: Circular Mil Area.

CMM: Coordinate Measuring Machine.

CMOS: A circuit with complementary MOS transistors.

CMSA: consolidated metropolitan statistical area

CNC Grinding: CNC Machining, short for Computer Numerical Control Machining, uses computers to control machine tools such as mills, grinders, lathes, and routers in the

manufacturing field, and can be used on three-dimensional plastic and metal parts when a high level of precision and/or repetition is needed. A customized computer program is programmed using the CNC machine language, G-code, and it controls all aspects of manufacturing such as speed, location, coordination, positioning, and velocity.

CNC Laser Cutting: CNC Laser Cutting refers to the use of a computer controlled laser to cut shapes or etch surfaces.

CNC Machining: CNC Machining, short for Computer Numerical Control Machining, uses computers to control machine tools such as mills, grinders, lathes, and routers in the manufacturing field, and can be used on three-dimensional plastic and metal parts when a high level of precision and/or repetition is needed. A customized computer program is programmed using the CNC machine language, G-code, and it controls all aspects of manufacturing such as speed, location, coordination, positioning, and velocity.

CNC Milling: CNC Milling is a machining process used to remove material from solid materials. The milling machine may be oriented with either a horizontal or vertical spindle and is operated by Computer Numerical Control (CNC). The CNC process allows for the automated or supervised control of the machining process with precise speed, location, and control of the cutting bit.

CNC Precision Turning: CNC Precision Turning is a machining process used to create turned parts such as washers, bushings, or threaded bolts on a rotational milling machine, also known as a lathe. The lathe is operated by Computer Numerical Control (CNC), a process that allows for the automated or supervised control of the lathe with precise speed, location, and control of the cutting bit.

CNG : Compressed Natural Gas

cnt: Cent

Co: Chemical symbol for cobalt.

CO: Carbon Monoxide.

CO control period ("seasons"): The portion of the year in which a CO nonattainment area is prone to high ambient levels of carbon monoxide. This portion of the year is to be specified by the Environmental Protection Agency but is to be not less than 4 months in length.

CO nonattainment area: Areas with carbon monoxide design values of 9.5 parts per million or more, generally based on data for 1988 and 1989.

CO/ALR: A marking designation used on certain devices to indicate their suitability for connection to either aluminum or copper conductors.

Co2 Laser Marker: Carbon dioxide (CO₂) lasers are the highest power lasers available and typically operate at high efficiencies, making them attractive for many different applications. When used in laser marking systems, CO₂ lasers deliver fast, high quality markings and are capable of marking most surfaces, including wood, glass, metals, and plastics. CO₂ lasers are also very cost effective and low maintenance.

Co2 Welding: CO₂ Welding is refers to MAG welding with CO₂ as the shielding gas. It uses a consumable wire electrode. CO₂ is widely used in MAG welding because it is more economical than inert argon gas.

Coal: A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted,

hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

coal: A material occurring in large underground deposits consisting of carbon and various carbon compounds. Formed by the decomposition of vegetable matter over many millions of years.

Coal: A black, solid fossil fuel found in the Earth. Coal is often burned to make electricity.

Coal analysis: Determines the composition and properties of coal so it can be ranked and used most effectively.

Coal bed: A bed or stratum of coal. Also called a coal seam.

Coal bed degasification: This refers to the removal of methane or coal bed gas from a coal mine before or during mining.

Coal Blending: The process of combining two or more coals with different characteristics to obtain coal with a certain quality, such as low sulfur content.

Coal briquets: Anthracite, bituminous, and lignite briquets comprise the secondary solid fuels manufactured from coal by a process in which the coal is partly dried, warmed to expel excess moisture, and then compressed into briquets, usually without the use of a binding substance. In the reduction of briquets to coal equivalent, different conversion factors are applied according to their origin from hard coal, peat, brown coal, or lignite.

Coal carbonized: The amount of coal decomposed into solid coke and gaseous products by heating in a coke oven in a limited air supply or in the absence of air.

Coal chemicals: Coal chemicals are obtained from the gases and vapor recovered from the manufacturing of coke. Generally, crude tar, ammonia, crude light oil, and gas are the basic products recovered. They are refined or processed to yield a variety of chemical materials.

Coal Classification: In the United States, coals are classified by rank progressively from lignite (least carbonaceous) to anthracite (most carbonaceous) based on the proximate analyses of various properties (fixed carbon, volatile matter, heating value, and agglomerating character), following methods prescribed by the American Society for Testing and Materials. The International Coal Classification of the Economic Commission for Europe recognizes two broad categories of coal, "brown coal" and "hard coal." In terms of U.S. coal classification, the international classification of brown coal includes lignite and lower-ranked subbituminous coal, whereas hard coal includes all higher rank coals. See Coal Rank.

Coal coke: See Coke (coal).

Coal consumption: The quantity of coal burned for the generation of electric power (in short tons), including fuel used for maintenance of standby service.

Coal delivered: Coal which has been delivered from the coal supplier to any site belonging to the electric power company.

Coal exports: Amount of U.S. coal shipped to foreign destinations, as reported in the U.S. Department of Commerce, Bureau of Census, "Monthly Report EM 545."

Coal face: This is the exposed area from which coal is extracted.

Coal Filter: A filter which contains a bed of anthracite media material used to remove contaminants, mud, and debris from the river water as part of the feed water treatment process.

Coal financial reporting regions: A geographic classification of areas with coal resources which is used for financial reporting of coal statistics.

Coal fines: Coal with a maximum particle size usually less than one-sixteenth inch and rarely

above one-eighth inch.

Coal gas: Substitute natural gas produced synthetically by the chemical reduction of coal at a coal gasification facility.

Coal gasification: The process of converting coal into gas. The basic process involves crushing coal to a powder, which is then heated in the presence of steam and oxygen to produce a gas. The gas is then refined to reduce sulfur and other impurities. The gas can be used as a fuel or processed further and concentrated into chemical or liquid fuel.

Coal grade: This classification refers to coal quality and use.

Coal imports: Amount of foreign coal shipped to the United States, as reported in the U.S. Department of Commerce, Bureau of the Census, "Monthly Report IM 145."

Coal liquefaction: A chemical process that converts coal into clean-burning liquid hydrocarbons, such as synthetic crude oil and methanol.

Coal mining productivity: Coal mining productivity is calculated by dividing total coal production by the total direct labor hours worked by all mine employees.

Coal preparation: The process of sizing and cleaning coal to meet market specifications by removing impurities such as rock, sulfur, etc. It may include crushing, screening, or mechanical cleaning.

Coal Preparation Processes (Cleaning/Beneficiation/Processing): In its broadest sense, preparation is any processing of mined coal to prepare it for market, including crushing and screening or sieving the coal to reach a uniform size, which normally results in removal of some non-coal or waste material. The term coal preparation most commonly refers to processing, including crushing and screening, passing the material through one or more processes to remove impurities, sizing the product, and loading for shipment. Many of the processes separate rock, clay, and other minerals from coal in a liquid medium; hence, the term washing is widely used. In some cases, coal passes through a drying step before loading. See Coal Washing.

Coal producing districts: A classification of coal fields defined in the Bituminous Coal Act of 1937. The districts were originally established to aid in formulating minimum prices of bituminous and subbituminous coal and lignite. Because much statistical information was compiled in terms of these districts, their use for statistical purposes has continued since the abandonment of that legislation in 1943. District 24 was added for the anthracite-producing district in Pennsylvania.

Coal production: The sum of sales, mine consumption, issues to miners, and issues to coke, briquetting, and other ancillary plants at mines. Production data include quantities extracted from surface and underground mines, and normally exclude wastes removed at mines or associated reparation plants.

Coal rank: The classification of coals according to their degree of progressive alteration from lignite to anthracite. In the United States, the standard ranks of coal include lignite, subbituminous coal, bituminous coal, and anthracite and are based on fixed carbon, volatile matter, heating value, and agglomerating (or caking) properties.

Coal sampling: The collection and proper storage and handling of a relatively small quantity of coal for laboratory analysis. Sampling may be done for a wide range of purposes, such as coal resource exploration and assessment, characterization of their serves or production of a mine, to characterize the results of coal cleaning processes, to monitor coal shipments or

receipts for adherence to coal quality contract specifications, or to subject a coal to specific combustion or reactivity tests related to the customer's intended use. During pre-development phases, such as exploration and resource assessment, sampling typically is from natural outcrops, test pits, old or existing mines in the region, drill cuttings, or drilled cores. Characterization of a mine's reserves or production may use sample collection in the mine, representative cuts from coal conveyors or from handling and loading equipment, or directly from stockpiles or shipments (coal rail cars or barges). Contract specifications rely on sampling from the production flow at the mining or coal handling facility or at the loadout, or from the incoming shipments at the receiver's facility. In all cases, the value of a sample taken depends on its being representative of the coal under consideration, which in turn requires that appropriate sampling procedures be carefully followed. For coal resource and estimated reserve characterization, appropriate types of samples include

Coal stocks: Coal quantities that are held in storage for future use and disposition. Note When coal data are collected for a particular reporting period (month, quarter, or year), coal stocks are commonly measured as of the last day of this period.

Coal sulfur: Coal sulfur occurs in three forms organic, sulfate, and pyritic. Organic sulfur is an integral part of the coal matrix and cannot be removed by conventional physical separation. Sulfate sulfur is usually negligible. Pyritic sulfur occurs as the minerals pyrite and marcasite; larger sizes generally can be removed by cleaning the coal.

Coal synfuel: Coal-based solid fuel that has been processed by a coal synfuel plant; and coal-based fuels such as briquettes, pellets, or extrusions, which are formed from fresh or recycled coal and binding materials.

Coal type: The classification is based on physical characteristics or microscopic constituents. Examples of coal types are banded coal, bright coal, cannel coal, and splint coal. The term is also used to classify coal according to heat and sulfur content. See Coal grade.

Coal Washing: The treatment of coal to remove waste material such as Dense (heavy) medium processes use a thick solution, usually a mixture of magnetite and water, to separate coal from impurities, such as sulfur, ash, and mercury, by gravity separation. Flotation processes treat fine-sized coal with an oil-based reagent that attracts air bubbles in a liquid medium; the coal floats to the surface as froth, leaving the refuse below. Hydraulic processes use currents of water to separate coal from impurities. Pneumatic processes use currents of air to separate coal from impurities.

Coal zone: A series of laterally extensive and (or) lenticular coal beds and associated strata that arbitrarily can be viewed as a unit. Generally, the coal beds in a coal zone are assigned to the same geologic member or formation.

Coalbed Methane Well Gas: Methane produced from coal seams. Coalbed methane is formed during coalification, which is the geologic process that transforms organic material into coal.

Coalescence: 1) the growth of particles of a dispersed phase by solution and reprecipitation, 2) the growth of grains by absorption of adjacent undistorted grains.

Coalition. : Australia, Canada, New Zealand, United Kingdom, United States, and other nations as applicable, collaborating as peers in a coalition operation.

Coal-producing regions: A geographic classification of areas where coal is produced.

Coal-Producing States: The States where mined and/or purchased coal originates are

defined as follows Alabama, Alaska, Arizona, Arkansas, Colorado, Illinois, Indiana, Kansas, Kentucky Eastern, Kentucky Western, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania anthracite, Pennsylvania bituminous, Tennessee, Texas, Utah, Virginia, Washington, West Virginia Northern, West Virginia Southern, and Wyoming.

Coated Metals: Sheet and strip steel or aluminum, usually in coil form, which has been covered on one or both sides with paint, enamel, adhesive, anti corrosive coatings, and/or laminates.

Coating: The process of covering steel with another material (for example tin, chrome, and zinc), primarily for corrosion resistance.

Coating Test: Performed by the Metallurgical Lab to check the amount of coating applied.

Coating Thickness Gage: A coating thickness gage is a measurement device used to measure the thickness of films or coatings applied to other materials. There are many different types of thickness gages, using both destructive and non-destructive methods. Among the options for thickness measurements are magnetic gages, eddy current techniques, micrometers, ultrasonic probes, and gravimetric techniques in which pre- and post-coating masses and volumes are used to compute an average coating thickness. The most popular coating thickness gage for metal parts are magnetic gages, in which the gage measures the force required to pull the magnetic lead off of the part in order to compute the thickness of the coating.

Coating Weight: 1) In the Sheet Mill, the amount of Zinc on a galvanized sheet measured in ounces per square foot. 2) Specified in pounds (or parts thereof) of tin coating per base box. This term is often misunderstood because in most cases the decimal point is omitted when written or printed.

Coating Weight Test: A test of the weight of the coating measured 2 inches from each side of the strip and at the center.

Coax Cable: See "Coaxial Cable".

Coax, coaxial cable. : A transmission medium noted for its wide bandwidth and for its low susceptibility to interference; signals are transmitted inside a fully enclosed environment - an outer conductor; the conductors are commonly separated by a solid insulating material.

Coaxial: A cable configuration having two cylindrical conductors with coincidental axis, such as, conductor with a tubular shield surrounding the conductor and insulated from it.

Coaxial cable: A transmission medium consisting of a conducting core, insulating material, and a second conducting sheath.

Coaxial Cable: Also known as "Coax", this cable is typically used to connect TV to its video source. Coaxial Cable consists of a small copper wire or tube, surrounded by an insulating material and another conductor with a larger diameter, normally copper braid or a cond

coaxial cable: A popular transmission medium usually consisting of one central wire surrounded by an insulator and encased in either a wire mesh or an extruded metal sheathing.

Coaxial Cable: A high-band width cable consisting of two concentric cylindrical conductors with a common axis that is used for high-speed data communication and video signals.

Coaxial Cable: the cables with inner conductor having tubular insulation surrounding

Coaxial converter. : (in ibm 3270 systems) a protocol converter designed to be used between 3270 control units and attached asynchronous devices; uses coaxial cable to connect to the

control unit.

Coaxial line. : A transmission line consisting of two coaxial cylindrical conductors.

Cobalt: Blue white metal, melting at 2715 B0F (1492 B0C), used in very hard alloy such as stellite, and a binder in carbide cutting tools.

Cocoon Process: A method of protecting metal parts by spraying on a cover of plastic filaments.

Code: An arrangement of symbols to stand for a word or an action.

Code (1). : A set of unambiguous rules specifying the manner in which data may be represented in a discrete form, such as ascii or ebcdic.

Code (2). : In telecommunications, a set of rules and conventions according to which the signals representing data can be formed, transmitted, received and processed.

Code (3). : A set of items, such as abbreviations, representing the members of another set.

Code (4). : A system of unambiguous rules defining how information can be represented by characters, symbols or signal elements.

Code book. : A book (or publication) used as a code, arranged in systematic form, containing a vocabulary made up of arbitrary meanings (letters, syllables, words, phrases or sentences), each accompanied by one or more groups of symbols as equivalents for the plain text of messages.

Code division multiple access - cdma. : Simultaneous reception by a satellite transponder of multiple signals overlapping in frequency and time, each uniquely identified by a discrete modulation code.

Code group. : A group of letters or numbers, or a combination of both, assigned (in a code system) to represent a plain text element.

Code Holes: The information holes in perforated tape, as opposed to feed or sprocket holes.

Code level. : The number of bits used to represent character.

Code of federal regulations: A compilation of the general and permanent rules of the executive departments and agencies of the Federal Government as published in the Federal Register. The code is divided into 50 titles that represent broad areas subject to Federal regulation. Title 18 contains the FERC regulations.

Code Width: Smallest voltage an A/D converter can detect; a function of resolution, gains, and range.

Code word (1): A word which has been assigned a classification and a classified meaning to safeguard intentions and information regarding a classified plan or operation.

Code word (2): A cryptonym used to identify sensitive intelligence data.

Code, brevity. : A code which provides no security but which has as its sole purpose the shortening of messages rather than the concealment of their content.

Code, combat. : A code or cipher, the purposes of which are simplicity and speed in addition to as much security as is possible without prejudicing unduly such simplicity and speed.

Code, international morse. : A code in which letters and numbers are represented by specific groupings of dots and/or dashes. The international morse code is used especially in radio telegraph and visual communication.

code, international signal. : A code adopted by many nations for international communication. The code uses combinations of letters to stand for words, phrases and sentences. The letters are transmitted by the hoisting of international alphabetic flags or

international morse code.

Code, panel or surface. : A prearranged code designed for visual communications between ground units and friendly aircraft.

Code, prearranged message. : A code adapted for the use of organisations which require special or technical vocabulary and composed almost exclusively of groups representing complete or nearly complete messages.

Code, privacy. : A code employed to protect the contents of a message from casual reading by unauthorised individuals (e.g. The press or communications staff) but which does not afford (and is not intended to afford) any security against organised cryptanalysis.

Code, pyrotechnics. : A prearranged code in which meanings are assigned to the various colours and arrangements of pyrotechnics.

Codec, coding and decoding equipment. : (in lan technology) pabx equipment or circuits that digitally code and decode voice signals.

Codress message. : A type of message in which the entire address is contained only in the encrypted text.

Codress procedure. : A procedure in which the entire address (including the true date-time group, if required, the originator and action addressee and information addressee(s) if any) is contained only in the encrypted text.

coefficient: A number or other known factor or multiplier which measures some specified property of a given substance or algebraic expression.

Coefficient of Beam Utilization: (CBU) The percentage of light from a floodlight which reaches the seeing task relative to beam lumens.

Coefficient Of Expansion: The relative rate at which a substance expands on heating, compared to a standard rate.

Coefficient of Performance: (COP) The ratio of the rate of heat removal to the rate of energy input, in consistent units, for a complete refrigerating plant under designated operating conditions.

Coefficient of Utilization (CU): The percentage of light generated within a luminaire which ultimately strikes the work surface. It is usually expressed as a decimal percentage.

Coefficient of Utilization (CU) : It is the measure of efficiency of luminaire in transferring luminous energy to the working plane a particular area

Coefficient of Utilization, CU: The ratio of the luminous flux (lumens) from a luminaire calculated as received on the work plane to the luminous flux emitted by the luminaire's lamps alone.

coercive force: The strength of the magnetic field to which a ferromagnetic material undergoing a hysteresis cycle must be subjected in order to demagnetise the material completely.

coercivity: The coercive force when the material is magnetised to saturation during the cycle.

Coffin Hoist: A chain hoist of any type.

Cofiring: The process of burning natural gas in conjunction with another fuel to reduce air pollutants.

Cogeneration: The production of electrical energy and another form of useful energy (such as heat or steam) through the sequential use of energy.

cogeneration: The production of electricity and the utilization of waste heat, which could be used to produce steam for additional power generation (as in a combined cycle facility).

Cogeneration: The process in which fuel is used to produce heat for a boiler-steam turbine or gas for a turbine. The turbine drives a generator that produces electricity, with the excess heat used for process steam.

Cogeneration system: A system using a common energy source to produce both electricity and steam for other uses, resulting in increased fuel efficiency.

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam), used for industrial, commercial, heating, or cooling purposes. To receive status as a qualifying facility (QF) under the Public Utility Regulatory Policies Act (PURPA), the facility must produce electric energy and "another form of useful thermal energy through the sequential use of energy" and meet certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC). (See the Code of Federal Regulations, Title 18, Part 292.)

Cohesion: The force by which like particles are held together. It varies with different metals and depends upon molecular arrangement due to heat treatment.

Coil: Windings of copper or aluminum wire surrounded by a core in ballast.

Coil Breaks: Creases or ridges across a metal sheet transverse to the direction of coiling, occasionally occurring when the metal has been coiled hot and uncoiled cold.

Coil Car: Unit that the coil sits on. Used to move a coil to the entry or from the delivery.

Coil End: ID of a coil that is left because of a defect. Ranging from 500 10,000 pounds. Anything 10,000 pounds and over get an IPM. A coil with a weight less than 5000 lbs. that does not meet customer specifications is called a salvage coil. These coils do not get an IPM number

Coil Line Markings: been placed on the strip by the platers. This mark serves as an indication to the feeder that the placement of the coil on the entry reel must be placed correctly to meet customer specifications (external customers request this mark to distinguish coating on the strip). The Feeder must refer to the scheduling book to determine how to place the coil on the entry reel for over or under wind.

Coil Loss: Power loss in a transformer due to the flow of current. These losses are present only when the transformer is serving a load. Load losses vary by the square of the current magnitude. Load losses are composed of losses due to the current flow through th

Coil Number: Produced IPM Number assigned to a coil. IPM (In Process Material) Number.

Coil Slitting: Coil slitting is a metal machining process in which coils of rolled sheet metal are cut, or slit, into smaller sizes. The coil slitting machinery varies depending on the specific needs of the production process and the size of the coils being processed. The coil slitting process usually includes a recoiling process in which the smaller components are wrapped up into new coils for packaging and distribution.

Coil Stripper: A piece of equipment on the off gauge reel used to help remove a coil from the reel.

Coil Weld: A joint between two lengths of metal within a coil not always visible in the cold reduced product.

Coil : A wound spiral of two or more turns of insulated wire, used to introduce inductance into a circuit, produce a magnetic field from current flow, or to respond to a changing

magnetic field by producing a voltage or mechanical motion.

Coilmate: Function of lens and reflector in a photoelectric device, concentrating the light beams from the light source.

Coils: Steel sheet that has been wound. A slab, once rolled in a hot strip mill, is more than one quarter mile long; coils are the most efficient way to store and transport sheet steel.

coincidence factor : The ratio of the coincident maximum demand of two or more loads to the sum of their non-coincident maximum demands for a given period.

Coincidental demand: The sum of two or more demands that occur in the same time interval.

coincidental demand : Two or more demands that occur at the same time.

Coincidental peak load: The sum of two or more peak loads that occur in the same time interval.

coincidental peak load : Two or more peak loads that occur at the same time.

Coining: The process of applying necessary pressure to all or some portion of the surface of a forging to obtain closer tolerances or smoother surfaces or to eliminate draft. Coining can be done while forgings are hot or cold and is usually performed on surfaces parallel to the parting of the forging.

Coke (coal): A solid carbonaceous residue derived from low-ash, low-sulfur bituminous coal from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace. Coke from coal is grey, hard, and porous and has a heating value of 24.8 million Btu per ton.

Coke (petroleum): A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton.

Coke Battery: A series of coke ovens stacked in rows into which coal is loaded and processed into coke.

Coke Bed: First layer of coke placed in the cupola. Also the coke as the foundation in constructing a large mold in a flask or pit.

Coke Breeze: Fines from coke screening, used in blacking mixes after grinding; also briquetted for cupola use.

Coke breeze: The term refers to the fine sizes of coke, usually less than one-half inch, that are recovered from coke plants. It is commonly used for sintering iron ore.

Coke button: A button-shaped piece of coke resulting from standard laboratory tests that indicates the coking or free-swelling characteristics of a coal; expressed in numbers and compared with a standard.

Coke Furnace: Type of pot or crucible furnace using coke as the fuel.

Coke Oven: A chamber of brick or other heat-resistant material in which coal is heated to separate the coal gas, coal water, and tar. The coal gas and coal water fuse together with carbon and the remaining ash, forming a hard residue commonly referred to as coke. Coke is primarily used in steel production. There are two types of coke ovens (1) beehive ovens, which were originally built round with a spherical top like an old-fashioned beehive, and have an opening in the top and various small openings for draft at the base. The ovens were developed into banks (rows) of joining cubicles. During the heating process of the coal, tar,

gas, and other byproducts are lost. (2) Byproduct ovens, which were built in rectangular form with the front and back removable, and which are arranged so that all volatile byproducts can be pumped out.

Coke Oven Battery: A set of ovens that process coal into coke. Coke ovens are constructed in batteries of 10 D1100 ovens that are 20 feet tall, 40 feet long, and less than two feet wide. Coke batteries, because of the exhaust fumes emitted when coke is pushed from the ovens, often are the dirtiest area of a steel mill complex.

Coke oven gas: The mixture of permanent gases produced by the carbonization of coal in a coke oven at temperatures in excess of 1,000 degrees Celsius.

Coke plants: Plants where coal is carbonized for the manufacture of coke in slot or beehive ovens.

Coke Plate (Hot Dipped Tin Plate): Standard tin plate, with the lightest commercial tin coat, used for food containers, oil canning, etc. A higher grade is the best cokes, with special cokes representing the best of the coke tin variety. For high qualities and heavier coatings.

Coke Porosity: The percentage volume of cell space in coke.

Coke, Beehive: Coke produced from a bituminous coal by the beehive process where heat for the coking process comes from a partial combustion of the coke. Generally characterized by an elongate stringy structure.

Coke, By Product: Coke produced from bituminous coal in airtight coke ovens where heat for coking process is externally applied. Generally more uniform in size than beehive coke, and usually ball or cube shape.

Coke, Petroleum: Residue left from the distillation of petroleum crude, used as a carbon raiser.

Coking: Thermal refining processes used to produce fuel gas, gasoline blendstocks, distillates, and petroleum coke from the heavier products of atmospheric and vacuum distillation. Includes

Coking coal: Bituminous coal suitable for making coke. See coke (coal).

Colbalt Based Superalloys: Eight specific alloys of at least 50% cobalt blended with traces of such other metals as iron, nickel, chrome, titanium, tungsten, carbon, zirconium, and/or tantalum; used in high temperature, high strength, anti corrosion applications (such as aircraft gas turbines and jet engine components).

COLC: Crude Oil Logistics Committee

Cold: Refers to nonenergized equipment, lines or circuits.

Cold Bend: Generally refers to a test to determine cable or wire characteristics at low temperatures.

Cold Box Process: 1) Any core binder process that uses a gas or vaporized catalyst to cure a coated sand while it is in contact with the core box at room temperature.

Cold Chamber Machine: A diecasting machine where the metal chamber and plunger are not immersed in hot metal.

Cold Coined Forging: A forging that has been re struck cold in order to hold closer face distance tolerances, sharpen corners or outlines, reduce section thickness, flatten some particular surface, or in non heat treatable alloys, increase hardness.

Cold Drawing: The process of reducing the cross sectional area of wire, bar or tube by drawing the material through a die without any pre heating. Cold drawing is used for the

production of bright steel bar in round square, hexagonal and flat section. The process changes the mechanical properties of the steel and the finished product is accurate to size, free from scale with a bright surface finish.

Cold Drawn Precision Tubes: Cold drawn precision tubes are created by a metalworking process known as drawing. In the drawing process, a piece of tube is pulled through a metal die designed to reduce the diameter and increase the length of the tube and may also improve the surface finish of the tube. When the tube is drawn at close to room temperature it is cold drawn. Because the part does not need to undergo the cooling and contraction associated with a heated process, the resulting cold drawn tube has precision dimensions.

Cold Finished Steel Bars: Hot rolled carbon steel bars after secondary cold reduction processing with better surface quality and strength.

Cold Finishing: The cold finishing of steel, generally used for bars and shafting, may be defined as the process of reducing their cross sectional area, without heating, by one of five methods Cold Rolling 2. Cold Drawing 3. Cold drawing and Grinding 4. Turning and polishing 5. Turning and Grinding

Cold Flow: Permanent deformation of the insulation due to mechanical forces without the aid of heat softening of the insulating material.

Cold Inspection: A visual (usually final) inspection of the forgings for visual defects, dimensions, weight and surface conditions at room temperature. The term may also be used to describe certain nondestructive tests, such as magnetic particle, dye penetrant and sonic inspection.

Cold Joint: A soldered joint made with insufficient heat.

Cold Junction Compensation (CJC): The referencing of thermocouple voltage outputs to ambient temperature in thermocouple measurements circuit.

Cold Lap: Wrinkled markings on the surface of an ingot or casting from incipient freezing of the surface.

Cold Reduced Strip: Metal strip, produced from hot rolled strip, by rolling on a cold reduction mill.

Cold Reduction: Reduction of metal size, usually by rolling or drawing particularly thickness, while the metal is maintained at room temperature or below the recrystallization temperature of the metal.

Cold Reduction Mill: Sheet and strip are cold reduced to the desired thickness for the following reasons 1) To obtain the desired surface. 2) To impart desired mechanical properties. 3) To make gauges lighter than the hot strip mill can produce economically. 4) To produce sheet and strip of more uniform thickness.

Cold Roll Base: Coils that are cold worked or reduced to gauge on the tandem mill.

Cold Rolled Finish: Finish obtained by cold rolling plain pickled sheet or strip with a lubricant resulting in a relatively smooth appearance.

Cold Rolled Sheet: A product manufactured from hot rolled descaled (pickled) coils by cold reducing to the desired thickness, generally followed by annealing and temper rolling. If the sheet is not annealed after cold reduction it is known as full hard. (See Full Hard Cold Rolled).

Cold Rolling: Rolling metal at a temperature below the softening point of the metal to create strain hardening (work hardening). Same as cold reduction, except that the working method is

limited to rolling. Cold rolling changes the mechanical properties of strip and produces certain useful combinations of hardness, strength, stiffness, ductility and other characteristics known as tempers, which see.

Cold Rolling Mill: A mill that reduces the cross sectional area of the metal by rolling at approximately room temperature.

Cold Screens: A screening device that removes sinter that is smaller than five millimeters in diameter before it goes to the Blast Furnace.

Cold Setting Binders: Term used to describe any binder that will harden the core sufficiently at room temperature so core can be removed from its box without distortion; commonly used in reference to oil oxygen type binders.

Cold Setting Process: An of several systems for bonding mold or core aggregates by means of organic binders, relying upon the use of catalysts rather than heat for polymerization (setting).

Cold Short: A characteristic of metals that are brittle at ordinary or low temperatures.

Cold Shot: Small globule of metal embedded in but not entirely fused with the casting.

Cold Shut: A defect characterized by a fissure or lap on the surface of a forging that has been closed without fusion during the forging operation. folding of the surface. It may have the appearance of a crack or seam with smooth, rounded edges. Also see Cold Lap

Cold Stack: Exhaust stack located at the BOP Scrubber. The Boiler Operator monitors the emissions through the cold stack.

Cold Strip Mill: A mill that rolls strip without first reheating.

Cold Treatment: Exposing steel to suitable subzero temperatures (85°F, or 120°F) for the purpose of obtaining desired conditions or properties such as dimensional or microstructural stability. When the treatment involves the transformation of retained austenite, it is usually followed by tempering.

Cold Work: The hardening and embrittlement of a metal by repeated flexing action.

Cold-deck imputation: A statistical procedure that replaces a missing value of an item with a constant value from an external source such as a value from a previous survey. See Imputation.

Collapsed Reel: A mandrel in the collapsed position.

Collate: 1) to merge items from two or more similarly sequenced files into one sequenced file, 2) to compare one thing critically with another of the same kind.

collector: The electrode in a transistor through which a primary flow of carriers leaves the inter-electrode region. It is called a collected because it collects or gathers the carriers sent into the base by the emitter.

Collector Main: The duct work used for moving air from the sinter machine to the fans.

Collector Roadway (Lighting): The distributor and collector roadways servicing traffic between major and local roadways. These are roadways used mainly for traffic movements within residential, commercial and industrial areas.

Collimator: A device for confining the elements of a beam of radiation within an assigned solid angle.

Collision: The event that occurs when two transmitters send at the same time on a channel designed for only one transmission at a time data will be destroyed.

Collision (1). : (in lan technology) the result of 2 stations attempting to use a shared

transmission medium simultaneously.

Collision (2). : (in a half-duplex system) the result of both ends trying to transmit at the same time.

Colloidal Clay: Finely divided clay of montmorillonite, kaolinite, or illite class; prepared for foundry purposes as in sand bonding.

Colloids, Colloidal Material: Finely divided material less than 0.5 micron (0.00002 in.) in size, such as albumin, glue, starch, gelatin, and bentonite.

Colometric Analysis: Determining the amount of an element in a solution by measuring the intrinsic color.

Color Code: A color system for circuit identification by use of solid colors, tracers, braids, surface printing, etc.

Color Discrimination: The perception of differences between two or more colors.

Color Etching: A micro etch resulting from the formation of a thin film of a definite compound of the metal.

Color Mark Detector: A sensor designed to differentiate between two different colored marks, or between a color mark and the background color it appears on. The contrast between the two marks, not the true color of the mark, is used for this detection. The color mark detector is available with either Red or Green LED emitter for this purpose.

Color Method: A technique of heat treating metal by observing the color changes that occur to determine the proper operation to perform to achieve the desired results.

Color Rendering: A general expression for the effect of a light source on the color appearance of objects in conscious or subconscious comparison with their color appearance under a reference light source.

Colorimeters: A colorimeter is a chemical measuring device used to determine the amount of solute dissolved in a solution. The colorimeter determines the concentration of the solution based on the wavelengths of light that are pass through the solution to a photoresistor that measures the light. Colorimeters make use of optical filters that can be adjusted to the wavelengths of light that pass through the solution of interest.

colour: The sensation of colour is the result of the interpretation by the human central nervous system of the effect produced upon the eye by electromagnetic radiation of a particular wave length.

colour rendering: General expression for the effect of an illuminant on the color appearance of objects in conscious or subconscious comparison with their color appearance under a reference illuminant.

colour temperature: The temperature of a full radiator (radiation of all frequencies) which would emit visible radiation of the same spectral distribution as the radiation from the light source under consideration. [Unit kelvin, K]

Columbium: Chemical symbol Co. Refractory metal used as an alloying agent in steel making; essential for high strength, low alloy grades. Has some worked metal applications, mostly alloyed with zirconium or titanium for aerospace applications. Called Niobium (Nb) everywhere but the U.S.

Column sample: a channel or drill core sample taken to represent the entire geologic coalbed; it includes all partings and impurities that may exist in the coalbed.

Columnar Structure: A coarse structure of parallel columns of grains, which is caused by

highly directional solidification.

Combination Die (Multiple Cavity Die): In die casting, a die with two or more different cavities for different castings.

Combination Square: A drafting and layout tool combining a square, level, protractor and a center head.

Combination Starter: A magnetic starter having a manually operated disconnecting means built into the same enclosure with the magnetic contractor or starter.

Combination Unilay: A stranding configuration that uses two strand sizes to achieve a 3% reduction in the conductor diameter without compression

Combination Wall Plates: A multiple gang wall plate with different openings in each gang for different devices.

Combined Carbon: Carbon in iron and steel which is combined chemically with other elements; not in the free state as graphitic or temper carbon.

Combined cis. : Combined cis are those that process, store, distribute or communicate information shared among two or more nations.

Combined collector: A photovoltaic device or module that provides useful heat energy in addition to electricity.

combined communications-electronics board (cceb) : cceb is a group originated in 1942 among australia, canada, new zealand, the united kingdom and the united states to coordinate all military communications-electronics matters from member nations. Its mission is to advance c4 interoperability for combined operations through policy, procedures, publications and participation.

Combined cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

Combined cycle unit: An electric generating unit that consists of one or more combustion turbines and one or more boilers with a portion of the required energy input to the boiler(s) provided by the exhaust gas of the combustion turbine(s).

combined cycle unit: An electricity generating unit consisting of one or more gas (combustion) turbines combined with a steam turbine. The steam turbine utilises the waste exhaust heat from the combustion turbines. This process increases the efficiency of the electric generating unit.

combined cycle : Combines the gas turbine cycle together with a heat recovery steam cycle that extracts heat from the gas turbine exhaust flow to produce steam.

combined federated battle laboratories network (cfblnet). : A communications research and development network connecting the allied research labs for the purpose of experimentation and testing in procedures, systems, and policy leading toward solutions to interoperability problems. Network supports coalition warrior interoperability demonstration (cwid) program and jfcom's mne program.

Combined heat and power (CHP) plant: A plant designed to produce both heat and electricity from a single heat source. Note This term is being used in place of the term "cogenerator" that was used by EIA in the past. CHP better describes the facilities because

some of the plants included do not produce heat and power in a sequential fashion and, as a result, do not meet the legal definition of cogeneration specified in the Public Utility Regulatory Policies Act (PURPA).

combined heat and power CHP: A plant that generates electricity and supplies thermal energy, typically steam, to an industrial or other heating requirement.

Combined household energy expenditures: The total amount of funds spent for energy consumed in, or delivered to, a housing unit during a given period of time and for fuel used to operate the motor vehicles that are owned or used on a regular basis by the household. The total dollar amount for energy consumed in a housing unit includes state and local taxes but excludes merchandise repairs or special service charges. Electricity, and natural gas expenditures are for the amount of those energy sources consumed. Fuel oil, kerosene, and LPG expenditures are for the amount of fuel purchased, which may differ from the amount of fuel consumed. The total dollar amount of fuel spent for vehicles is the product of fuel consumption and price.

Combined hydroelectric plant: A hydroelectric plant that uses both pumped water and natural streamflow for the production of power.

Combined information infrastructure (cii). : The shared or interconnected system of telecommunications networks, computers, databases and electronic systems serving the combined joint task forces (cjtf) information needs. It comprises components of the member nation's national information infrastructure (nii), and includes the people who manage and serve the infrastructure, and the information itself. (au)

Combined pumped-storage plant: A pumped-storage hydroelectric power plant that uses both pumped water and natural stream flow to produce electricity.

Combined restricted frequency list (crfl). : An approved list of frequencies used to provide different levels of protection to those frequencies, which if disrupted by harmful, friendly interference, would have a detrimental impact on the operation. Within a single nation/multiple component context, this is referred to as a joint restricted frequency list (jrfl).

combined spectrum management cell (csmc). : The office containing the staff supporting the combined task force (ctf), with delegated responsibility for spectrum management.

Combined station: In HDLC protocol, a station that can function as a primary or secondary station at the same time.

Combined Water: That water in mineral matter which is chemically combined and driven off only at temperatures above 231 B0F (111 B0C).

Combustion: Chemical oxidation accompanied by the generation of light and heat.

combustion: or Burning. A chemical reaction or complex chemical reaction, in which a substance combines with oxygen producing heat, light and flame.

Combustion Air Flow: The measured and controlled amount of air flow delivered to a boiler to promote proper combustion.

Combustion chamber: An enclosed vessel in which chemical oxidation of fuel occurs.

combustion turbine: A type of generating unit normally fired by oil or natural gas. The combustion of the fuel produces expanding gases, which are forced through a turbine, thereby generating electricity.

Come-a-long: A wire grip for holding a conductor or strand under tension.

Command and control (c2). : The exercise of authority and direction by a properly

designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

Command port. : The console used to control and monitor a network or system; also, the interface to which the console is connected .

Command Signal: An external signal to which the servo must respond.

Command, control, communication and information systems (c4is). : A self-Explanatory term used to define a wider scope of responsibilities than communications or signals which embraces the flow of information in support of command and control.

Command. : An order transmitted to a satellite to initiate an operation. Commands may be encrypted for secure transmission.

Commercial: Kerosene-type jet fuel intended for use in commercial aircraft.

Commercial (Lighting): A business area of a municipality where there are ordinarily many pedestrians during night hours. The definition applies to densely developed business area outside, as well as within, the central part of a municipality. The area contains land use attrac

Commercial Bronze: A copper zinc alloy (brass) containing 90% copper and 10% zinc; used for screws, wire, hardware, etc. Although termed commercial bronze it contains no tin. It is somewhat stronger than copper and has equal or better ductility.

Commercial building: A building with more than 50 percent of its floor space used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings are included except for buildings on military bases or reservations.

Commercial facility: An economic unit that is owned or operated by one person or organization and that occupies two or more commercial buildings at a single location. A university and a large hospital complex are examples of a commercial multi-building facility.

Commercial operation (nuclear): The phase of reactor operation that begins when power ascension ends and the operating utility formally declares the nuclear power plant to be available for the regular production of electricity. This declaration is usually related to the satisfactory completion of qualification tests on critical components of the unit.

commercial operation : Commercial operation occurs when control of the generator is turned over to the system dispatcher.

Commercial Quality Steel Sheet: Normally to a ladle analysis of carbon limit at 0.15 max. A Standard Quality Carbon Steel Sheet.

Commercial sector: An energy-consuming sector that consists of service-providing facilities and equipment of businesses; Federal, State, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. It also includes sewage treatment facilities. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a wide variety of other equipment. Note This sector includes generators that produce electricity and/or useful thermal output primarily to support the activities of the above-mentioned commercial establishments.

Commercial Tolerance: A range by which a product's specifications can deviate from those

ordered and still meet the industry accepted ranges (defined in ASTM Standards, etc.)

Commercial-off-the-shelf (cots). : Pertaining to a commercially marketed product which is readily available for procurement and normally used without modification. Notes: (1). A cots product is often provided in large quantities and at relatively low cost to meet the demands of a wide range of user needs. (2). Normally, for cots software, source code is not provided and maintenance is provided by the manufacturer under licence. (ca).

Commingling: The mixing of one utility's generated supply of electric energy with another utility's generated supply within a transmission system.

Commissioned agent: An agent who wholesales or retails a refined petroleum product under a commission arrangement. The agent does not take title to the product or establish the selling price, but receives a percentage of fixed fee for serving as an agent.

Committed burst size (Bc): The maximum number of bits in a specific time period that a Frame Relay network must transfer without discarding any frames.

Committed information rate (CIR): The committed burst size divided by time.

Common carrier: A transmission facility available to the public and subject to public utility regulation.

Common carrier. : A private date communications utility company or a government organisation that furnishes communications services to the general public and that is usually regulated by local, state or federal agencies. Often, ptt's provide these services outside the usa; telcos inside.

Common equity (book value): The retained earnings and common stock earnings plus the balances in common equity reserves and all other common stock accounts. This also includes the capital surplus, the paid-in surplus, the premium on common stocks, except those balances specifically related to preferred or preference stocks; less any common stocks held in the treasury.

Common gateway interface (CGI): A standard for communication between HTTP server and executable programs. GI is used in creating dynamic documents.

Common Ground Connection: Location where two or more continuous grounded wires terminate.

Common management information protocol (CMIP): A protocol to implement OSI management services.

Common management information service (CMIS): An OSI management service.

Common management information service element (CMISE): A specific service provided by CMIS.

Common Mode: Noise, caused by a difference in "ground potential." By grounding at either end rather than both ends (usually grounded at source) one can reduce this interference.

common mode noise: Electrical noise or interference between each of the conductors and ground

common mode signal: A signal that is applied with equal strength to both inputs of a differential amplifier or an operational amplifier.

common mode tripping: Automatic removal of two or more generating plant from the system owing to a cause that is common to both or all the generators.

Common operating environment (coe). : Coe architectures and interoperability standards provide technical guidelines and standards on which to base development and implementation

of automated information systems (ais) and support software. The degree of coe compliance directly relates to a system's ability to be interoperable with other systems within the same common operating environment.

Common use(r). : In reference to a circuit or channel, indicates service for any number of users.

commonality. : A quality which applies to materiel or systems possessing like and interchangeable characteristics enabling each to be utilised or operated and maintained by personnel trained on the others without additional specialised training and/or having interchangeable repair parts and/or components; and applying to items interchangeably equivalent without adjustment.

Common-Mode Range: Input range over which a circuit can handle a common-mode signal.

Common-Mode Rejection Ratio (CMRR): Measure of an instruments ability to reject interference from a common-mode signal, usually expressed in decibels (db).

Common-Mode Signal: Mathematical average voltage, relative to a computers ground, of the signals from a different input.

Common-Mode Signals: The component of an analog signal which is present with one sign on all considered conductors.

Communication and information systems (cis). : Assembly of equipment, methods and procedures (and if necessary personnel), organised so as to accomplish specific information conveyance and processing functions.

Communication guard, radio. : A communication system designated to listen for and record transmission and to handle traffic on a designated frequency for a certain unit or units.

Communication security (comsec). : The protection resulting from all measures designed to deny to unauthorised persons information of value which might be derived from the possession and study of telecommunications, or to mislead unauthorised persons in their interpretation of the results of such a study. Communications security includes: b.Crypto security. c.) Physical security of communications and security materials and information.

Communication, interior/internal. : Rapid communication facilities, electrical, acoustical or mechanical, interconnecting the various operational spaces of a naval vessel, aircraft or other activity.

Communication, joint. : Common use of communication facilities by two or more services of the same nation.

Communication, line/wire. : The use for communication purposes of a physical path, such as wire or waveguide, between terminals.

Communication, radio. : The use of radio for communication purposes. It is technically described as telecommunication using radio waves not guided between the sender and receiver by physical paths such as wire or waveguides.

communication, sound. : See sound signalling.

Communication, visual. : The use for communications purposes of optical signs such as flags, lights etc.

Communication. : The transfer of intelligence or knowledge according to agreed conventions.

Communications countermeasures. : All electronic countermeasures taken against communications.

Communications deception. : The deliberate introduction of deceptive emissions into friendly or enemy radio communications channels with the intention of misleading the enemy.

Communications electronics (c-e). : The specialised field concerned with the use of electronic devices and systems for the acquisition or acceptance, processing, storage, display, analysis, protection and transfer of information.

Communications intelligence (comint). : Technical material and intelligence information derived from electromagnetic communications and communications systems (eg morse, voice, teleprinter, facsimile) by other than the intended recipients.

Communications jamming (comjam). : That portion of electronic jamming directed against communications circuits.

Communications network. : An organisation, geographically disseminated, of communications stations interconnected to communicate information, and comprising of the stations communication equipment and the physical means that link them up.

Communications protocol. : The means used to control the orderly exchange of information between stations on a data link or on a data communications network or system. Also called line discipline - or protocol, for short.

communications security (comsec) monitoring. : The protection resulting from the application of crypto security, transmission security and emission security measures to telecommunications and from the application of physical security measures to comsec information. These measures are taken to deny unauthorised persons information of value which might be derived from the possession and study of such telecommunications, or to ensure the authenticity of such telecommunications.

Communications, agency of. : A facility which embraces personnel and equipment necessary to provide communications by any means or combination thereof.

Communications, air-ground. : A method or means of conveying information between aircraft in flight and ground stations.

Communications, signal. : The means of conveying information of any kind from one person or place to another except by direct unassisted conversation or correspondence.

Communications, teletypewriter. : The use of teletypewriter for communications purposes. Ratt designates teletypewriter communications over a radio link (see ratt). Tty designates teletypewriter communications over other than a radio link.

Communications/signal centre (commcen). : An agency charged with the Responsibility for receipt, transmission and delivery of messages. It normally includes a message centre, transmitting and receiving facilities (transmitting, receiving and relay stations are not necessarily located in the communications centre but facilities for the remote control thereof must terminate therein).

commutation angle, overlap angle: The commutation period between two thyristors on the same side of the bridge is the angle by which one thyristor commutates to the next.

Commutator: A cylindrical arrangement of insulated metal bars connected to the armature coils of a direct-current electric motor or generator, providing a unidirectional current from the generator or a reversal of current into the coils of the motor.

commutator: Device for altering the direction of an electric current.

Commutator: Device used on electric motors or generators to maintain a unidirectional current.

Compact Conductor: A concentric stranded conductor which after stranding and on subsequent layers in a multiple layered cable, is passed through a closing die or roller die to reduce the diameter approximately 10% thus eliminating the normal interstices in the cable.

Compact fluorescent bulbs: These are also known as "screw-in fluorescent replacements for incandescent" or "screw-ins." Compact fluorescent bulbs combine the efficiency of fluorescent lighting with the convenience of a standard incandescent bulb. There are many styles of compact fluorescent, including exit light fixtures and floodlights (lamps containing reflectors). Many screw into a standard light socket, and most produce a similar color of light as a standard incandescent bulb. Compact fluorescent bulbs come with ballasts that are electronic (lightweight, instant, no-flicker starting, and 10 to 15% more efficient) or magnetic (much heavier and slower starting). Other types of compact fluorescent bulbs include adaptive circulation and PL and SL lamps and ballasts. Compact fluorescent bulbs are designed for residential uses; they are also used in table lamps, wall sconces, and hall and ceiling fixtures of hotels, motels, hospitals, and other types of commercial buildings with residential-type applications.

compact fluorescent lamp, CFL: A fluorescent lamp in compact form that may be conveniently used, in normal holders, in place of the lesser efficient incandescent lamps. The lamp life is significantly longer than incandescent lamps.

Compact fluorescent lights: Lights that use a lot less energy than regular light bulbs. We can use compact fluorescent lights for reading lights and ceiling lights.

Compact Round Conductor: A concentric stranded conductor with the layers of individual wires all laid in the same direction and rolled or die compacted by layer to a predetermined size. This results in an extremely smooth conductor at the same time preserving the flexibility of a stranded conductor. Advantages are minimum overall diameter for a given conductor area and freedom from "bird caging" of strand under bending, and the practical elimination of space between strands. Used in some high voltage power cables.

Compact Stranding: A stranding configuration with concentric strands in which each layer is passed through a compacting die to reduce the conductor diameter by approximately 10%

Compaction. : See compression.

compander: It is a method of mitigating the detrimental effects of a channel with limited dynamic range.

Compandor. : A single device that combines the functions of a compressor and expander.

Company: See Firm.

Company automotive (retail) outlet: Any retail outlet selling motor fuel under the brand name of a company reporting in the EIA Financial Reporting System.

Company outlet: See Company-operated automotive outlet.

Company-lessee automotive outlet: One of three types of company automotive (retail) outlets. This type of outlet is operated by an independent marketer who leases the station and land and has use of tanks, pumps, signs, etc. A lessee dealer typically has a supply agreement with a refiner or a distributor and purchases products at dealer tank wagon prices. The term includes outlets operated by commissioned agents and is limited to those dealers who are supplied directly by a refiner or any affiliate or subsidiary company of a refiner.

Company-open automotive outlet: One of three types of company automotive (retail) outlets. This type of outlet is operated by an independent marketer who owns or leases (from

a third party that is not a refiner) the station or land of a retail outlet and has use of tanks, pumps, signs, etc. An open dealer typically has a supply agreement with a refiner or a distributor and purchases products based on either rack or dealer tank wagon prices.

Company-operated automotive outlet: One of three types of company automotive (retail) outlets. This type of outlet is operated by salaried or commissioned personnel paid by the reporting company.

Company-operated outlet: See Company-operated retail outlet.

Company-operated retail outlet: Any retail outlet (i.e., service station) which sells motor vehicle fuels and is under the direct control of a firm that sets the retail product price and directly collects all or part of the retail margin. The category includes retail outlets operated by (1) salaried employees of the firm and/or its subsidiaries and affiliates, (2) licensed or commissioned agents, and/or (3) personnel services contracted by the firm.

Comparator: The device which compare two voltage and currents or a circuit for comparing two signals.

compass: The magnetic compass is used to obtain the direction of the earth's magnetic field at a point. In its simplest form consists of a magnetised needle pivoted at its centre so that it is free to move in a horizontal plane.

Compatibility. : Capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference. See also interchangeability.

Compatiblility: The ability of various specified units to replace one another, with little or no reduction in capability. The ability of units to be interconnected and used without modification.

Compensated Temperature Range: The range of ambient temperatures within which the transducer will perform according to its output specifications.

Compensator: A manually operated reduced voltage starter.

Competition Transition Charge (CTC): A charge itemized on customer bills to recover costs associated with investor owned utility investments in generationrelated assets and statemandated contracts with nonutility generators that may now be uneconomic and unrecoverable in the restructured e

competitive bidding : This is a procedure that utilities use to select suppliers of new electric capacity and energy. Under competitive bidding, an electric utility solicits bids from prospective power generators to meet current or future power demands. Competitive bidding systems to select more fairly among numerous supply alternatives.

Competitive transition charge: A non-bypassable charge levied on each customer of the distribution utility, including those who are served under contracts with nonutility suppliers, for recovery of the utility's stranded costs that develop because of competition.

complementary MOS: , A method of reducing the current drain of a digital circuit by combining n-channel and p-channel MOSFETs.

Complementary Outputs: Sensors with both N.O. and N.C. outputs which change state simultaneously.

Completion (oil/gas production:)The term refers to the installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a "well" (classified as an oil well or gas well) and the

definition of a "completion" are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a "well" is not synonymous with a "completion." (See Well.)

Completion date (oil/gas production): The date on which the installation of permanent equipment has been completed as reported to the appropriate regulatory agency. The date of completion of a dry hole is the date of abandonment as reported to the appropriate agency. The date of completion of a service well is the date on which the well is equipped to perform the service for which it was intended.

complex number: Consists of two parts, real and imaginary. They obey the ordinary laws of algebra except that their real and imaginary parts must be equated separately.

Compliance coal: is a coal, or a blend of coal, that meets sulfur dioxide emission standards for air quality without the need for flue-gas desulfurization.

Compliance coal: A coal or a blend of coals that meets sulfur dioxide emission standards for air quality without the need for flue gas desulfurization.

Compliance Voltage: The specified maximum voltage that a transducer (or other device) current output must be able to supply while maintaining a specified accuracy.

Component: The smallest element of a circuit (i.e. resistor, capacitor, transistor or integrated circuit package.)

Component Lead: The solid or stranded wire or formed conductor that extends from a component and serves as a readily formable mechanical or electrical connection or both.

Component. : A software process or a combination of software process and its hardware platform which performs a service in the preparation, transmission, or translation of messages.

Component/s: In electronics, a general term to refer to a part or parts of a circuit without reference to specific names.

Composite Alloy: An aluminum alloy containing relatively large amounts of two or more other elements.

Composite Cable: A composite cable is an electrical conductor used to transfer video and audio signals between home entertainment devices. Composite cables are made up of three separate conductors, each terminated with an RCA plug. The three cables are also color-coded, with the yellow plug carrying a composite video signal and red and white (or black) plugs carrying the right and left sides, respectively, of a stereo audio signal.

Composite Conductor: A composite conductor consists of two or more strands of different metals, such as aluminum and steel, or copper and steel. i.e. ACSR, ACAR, AWAc.

Composite Construction: Welding a steel casting to a rolled or forged steel object or to another casting. See Cast Weld

Composite Joint: A joint that is both welded and joined mechanically.

Composite loopback. : A diagnostic test that forms the loop at the line side (output) or a multiplexor; (refer to loopback).

Composite Material: A combination of two or more materials (reinforcing elements, fillers and composite matrix binder), differing in forms or composition on a macroscale. The constituents retain their identities, that is, they do not dissolve or merge completely into one another although they act in concert. Normally, the components can be physically identified and exhibit an interface between one another. Examples are cermets and metal matrix

composites.

Composite sample: a recombined coalbed sample produced by averaging together thickness-weighted coal analyses from partial samples of the coalbed, such as from one or more bench samples, from one or more mine exposures or outcrops where the entire bed could not be accessed in one sample, or from multiple drill cores that were required to retrieve all local sections of a coal seam.

Composite signal: A signal composed of more than one sine wave.

Composite. : The line side signal of a concentrator or multiplexor that includes all the multiplexed data.

Compound: An insulating or jacketing material made by mixing two or more ingredients

Compound: the substance formed by two or more elements is known as compound

Compound: A term used to designate an insulating and jacketing material made by mixing two or more ingredients. To compound the mixing together of two or more different materials to make one material.

Compound Gauge: A visual indicator of pressure that is set for 'zero' psi at atmospheric pressure and includes a dial which will continue to indicate the level of pressure above or below atmospheric pressure.

compound motor: A d.c. motor with both a series connected winding as well as a shunt connected winding. Depending on whether the fields of the series winding and the shunt winding aid each other or oppose each other, they are called cumulative compound or differential compound.

Compressed: A stranding configuration with concentric strands in which either all layers or the outer layer only is passed through a die to reduce the conductor diameter by 3%

Compressed: Something pressed in to less space which is less than to its normal volume.

Compressed Conductor: A concentric stranded conductor which after stranding, or on subsequent layers of a multiple layered conductor, is passed through a die to reduce the overall diameter approximately 3%.

Compressed natural gas (CNG): Natural gas compressed to a pressure at or above 200-248 bar (i.e., 2900-3600 pounds per square inch) and stored in high-pressure containers. It is used as a fuel for natural gas-powered vehicles.

Compressed permutation: A bit level encryption technique in which bit positions are changed and bits are dropped.

Compressed-air energy storage (CAES): CAES plants use off-peak electrical energy to compress air into underground storage reservoirs for storage until times of peak or intermediate electricity demand. Wind power offers a good opportunity for charging CAES storage. The storage is typically underground in natural aquifers, depleted oil or gas fields, mined salt caverns, or excavated or natural rock caverns. To generate power, the compressed air is first heated by gas burners, then passed through a turbine.

Compressibility: The change in volume of a unit of fluid when it is subjected to a unit change in pressure (in' / lb).

Compression: The reduction of a message without significant loss of information.

Compression Splice: A compression connector used to join two conductors. There are different designs used for overhead and underground conductors. For overhead conductors, there are different designs for limited and full tension applications.

Compression Test: Imposing a dead load on a small cylindrical test piece to determine compressive strength, expressed in pounds per sq. in.

Compression. : Two types are available:a. Data compression, which reduces the number of bits required to represent data (accomplished in many ways, including using special coding to represent strings of repeated characters or using fewer bits to represent the more frequently used characters).b. Analogue compression, which reduces the bandwidth needed to transmit an analogue signal. Also called compaction.

Compressive Strength: The maximum compressive stress that a material is capable of developing, based on original area of cross section. In the case of a material which fails in compression by a shattering fracture, the compressive strength has a very definite value. In the case of materials which do not fail in compression by a shattering fracture, the value obtained for compressive strength is an arbitrary value depending upon the degree of distortion that is regarded as indicating complete failure of the material.

Compressor station: Any combination of facilities that supply the energy to move gas in transmission or distribution lines or into storage by increasing the pressure.

Compressor. : A device that performs analogue compression. See also compandor.

Compromise equalizer. : An equalizer set for best overall operation for a given range of line conditions; often fixed, but may be manually adjustable.

Compromise, cryptographic. : Recovery of cryptographic information or plain text of messages by unauthorised persons through cryptanalytic methods.

Compromise, physical. : The availability of material or the disclosure of information to unauthorised persons through loss, theft, capture, recovery by salvage, defection of individuals, unauthorised viewing, photography, or by any other physical means.

compromise.: A violation of the security system such that an unauthorised disclosure, modification, or destruction of sensitive or classified information may have occurred or that a denial of service condition has been induced. (nato)

Compusec. : The application of hardware, firmware, and software security features to a computer system in order to protect against, or prevent, the unauthorised disclosure, manipulation, modification or deletion of information, or denial of service. (nato)

Computer Aided Design: Computer Aided Design (CAD), also referred to as Computer Aided Drafting, refers to the use of computer software to create 2D or 3D drawings and models. CAD software allows the user to define proper object dimensions, create assembly models, and export information necessary for manufacturing and inspection processes. There are many different CAD software suppliers worldwide, with a wide variety of software capabilities and customization options.

Concatenation: Combining two or more data units coming from the session layer to form one segment in the transport layer.

Concave: A curved depression in the surface of an object.

Concentrate: See Uranium oxide concentrate (U3O8).

Concentrating: arrays must track the sun and use only the direct sunlight because the diffuse portion cannot be focused onto the Photovoltaic cells.

Concentrating solar power or solar thermal power system: A solar energy conversion system characterized by the optical concentration of solar rays through an arrangement of mirrors to generate a high temperature working fluid. Also see Solar trough, Solar power

tower, or Solar dish. Concentrating solar power (but not Solar thermal power) may also refer to a system that focuses solar rays on a photovoltaic cell to increase conversion efficiency.

Concentration. : Collection of data at an intermediate point from several low and medium speed lines for transmission across one high speed line.

Concentrator: A reflective or refractive device that focuses incident insolation onto an area smaller than the reflective or refractive surface, resulting in increased insolation at the point of focus.

Concentrator: A Photovoltaic module that uses optical elements to increase the amount of sunlight incident on a Photovoltaic cell.

Concentrator : Concentrators are the units which allow handling more data sources other than available channels.

Concentrator (module, array, or collector): An arrangement of photovoltaic cells that includes a lens to concentrate sunlight onto small-area cells. Concentrators can increase the power flux of sunlight hundreds of times.

Concentrator (Photovoltaic): See "Photovoltaic Concentrator".

Concentrator. : A device used to divide a data channel into two or more channels of average lower speed, dynamically allocating space according to the demand in order to maximize data throughput at all times. Also called an intelligent tdm, atdm, or statistical multiplexor.

concentric: Circles having the same centre.

Concentric Neutral: A number of wire concentrically stranded about a cable for use as a neutral.

Concentric Stranding: A stranding configuration in which individual wires are stranded concentrically with no reduction in overall diameter. Typically used for bare conductors

Concentric Stranding: A group of uninsulated wires twisted so as to contain a center core with one or more distinct layers of spirally wrapped, uninsulated wires laid overall to form a single conductor. When more than one layer is present each layer must have a different lay length.

Concentricity: In a wire or cable, the measurement of the location of the center of the conductor with respect to the geometric center of the surrounding insulation.

Concentricity: In a wire or cable, the measurement of the location of the center with respect to the geometric center of the circular insulation.

Concentric-Lay Cable: A concentric-lay conductor or a multiple-conductor cable composed of a central core surrounded by one or more layers of helically laid conductors.

Concession: The operating right to explore for and develop petroleum fields in consideration for a share of production in kind (equity oil).

Concessionary purchases: The quantity of crude oil exported during a reporting period, which was acquired from the producing government under terms that arise from the firm's participation in a concession. It includes preferential crude where the reporting firm's access to such crude is derived from a former concessionary relationship.

Concrete Filler Sealant: Concrete filler sealant is a repair compound used to fill and seal cracks and small holes in concrete. The most common type of filler sealant is latex-based caulking; however, epoxy sealants may also be used for repair projects. Silicon is often added to the filler in order to improve adhesion and water resistance.

Concrete Foundations: A platform made of concrete that provides a solid stable support for

large equipment. Concrete foundations or pads are laid for all large equipment, support structures, and control buildings in a substation.

Concrete Stabilization: Concrete stabilization is a construction repair service that addresses the failure of a concrete structure, specifically the shifting of concrete slabs. Concrete stabilization typically focuses on the injection or insertion of supplemental materials to help fortify the underlying substrate on which the concrete rests.

Condensate (lease condensate): Light liquid hydrocarbons recovered from lease separators or field facilities at associated and non-associated natural gas wells. Mostly pentanes and heavier hydrocarbons. Normally enters the crude oil stream after production.

condenser: (see capacitor)

Condenser cooling water: A source of water external to a boiler's feed system is passed through the steam leaving the turbine in order to cool and condense the steam. This reduces the steam's exit pressure and recaptures its heat, which is then used to preheat fluid entering the boiler, thereby increasing the plant's thermodynamic efficiency.

Conditionally effective rates: An electric rate schedule that has been put into effect by the FERC subject to refund pending final disposition or refiling.

Conditioning: Improving the quality of a line by lessening the attenuation and distortion.

Conditioning. : The "tuning" or addition of equipment to improve the transmission characteristics or quality of a leased voice-grade line so that it meets specifications for data transmission.

Conduct: The ability of two conductors separated by a dielectric to store electricity when a potential difference exists between the conductors.

conductance: The conductance is the reciprocal of the resistance in a resistive circuit, or the real part of the admittance in a complex circuit. It is also the ability of an element to conduct electric current [Unit siemens or S]

Conductance: The reciprocal of resistance. It is the ratio of current passing through a material to the potential difference at its ends.

Conductance: A measure of the ability of a conductor configuration to conduct an electrical charge. Conductance is a ratio of the current flow to the potential difference causing the current flow.

Conductance (G): The ability of a conductor to allow the flow of electrons. Measured in Siemens (S).The reciprocal of resistance.

Conducting Parts: Those parts designed to carry current or which are conductively connected therewith.

Conduction band; Conduction level: Energy level at which electrons are not bound to (orbiting) a specific atomic nucleus but are free to wander among the atoms. An energy band in which electrons can move freely in a solid, producing a net transport of charge.

Conductivity: The capability of a conductor to carry electricity, usually expressed as a percent of the conductivity of a same sized conductor of soft copper

conductivity: Electrical conductivity is the reciprocal of electrical resistivity.

Conductivity: The ability of a material to conduct electric current. It is expressed in terms of the current per unit of applied voltage. It is the reciprocal of resistivity.

Conductivity: Materials ability to conduct or allow to pass electric current is called conductivity it is reciprocal electrical resistivity.

Conductivity: A term used in describing the capability of a material to carry an electrical charge. Usually expressed as a percentage of copper conductivity - copper being one hundred (100%) percent. Conductivity is expressed for a standard configuration of conductor.

Conductor: A low-resistance material to provide a path for current. Used to interconnect components in a circuit.

Conductor: Metal wires, cables, and bus-bar used for carrying electric current. Conductors may be solid or stranded, that is, built up by an assembly of smaller solid conductors.

Conductor: See "Coil Loss".

conductor: A wire, cable, rod, tube or bus bar designed for the passage of electrical current.

Conductor: A wire or combination of wires not insulated from one another, suitable for carrying electric current.

Conductor: The material which allow to pass electric current are called electric conductors

Conductor: Any material capable of carrying an electrical charge easily.

Conductor Loss: A semiconducting material, normally crosslinked polyethylene, applied over the conductor to provide a smooth and compatible interface between the conductor and insulation.

conductor loss: Loss occurring in a conductor due to the flow of current. Also known as the $I^2 R$ loss and copper loss.

Conductor Losses: Losses caused by the resistance of the transformer winding and usually measured at 25, 50, 75 and 100 percent of load.

Conductor Shield: 1) A wire or combination of wires suitable for carrying an electrical current. Conductors may be insulated or bare. 2) Any material that allows electrons to flow through it.

conductor : An object or substance which conducts electric current.

Conduit: Volumetric measurement of the duct space occupied by the cables inside, expressed as a percent.

conduit: A tubular raceway for power or data cables. Both metallic conduit and non-metallic forms may be used.

Conduit: The channel for providing the fluid.

Conduit: An enclosure for conductors. For underground wiring there are numerous kinds of conduit fiber, asbestos cement, metallic, soapstone, rigid polyvinyl chloride (PVC), fiberglass epoxy, etc.

Conduit Fill: A channel for holding and protecting conductors and cables, made of metal or an insulating material, usually circular in cross section like a pipe. Also referred to as Duct.

Conduits: Conduits are hollow tubes running from manhole to manhole in an underground transmission or distribution system.

Cone of silence. : An inverted cone-shaped space directly over the aerial towers of some forms of radio beacons in which signals are unheard or greatly reduced in volume.

Conference of the parties (COP): The collection of nations that have ratified the Framework Convention on Climate Change (FCCC). The primary role of the COP is to keep implementation of the FCCC under review and make the decisions necessary for its effective implementation. Also see Framework Convention on Climate Change (FCCC).

Confidentiality. : The property that information is not made available or disclosed to unauthorised individuals, entities, or processes. (nato)

Configuration maps: Geographic information containing transmission line, substation, and terminal information. It shows the normal operating voltages and includes information about other operational and political boundaries.

confusion reflector.: A reflector of electromagnetic radiation's used to create echoes for confusion purposes. Radar confusion reflectors include such devices as chaff, rope and corner reflectors.

Congestion: Excessive network or internetwork traffic causing a general degradation of service.

Congestion: A condition that occurs when insufficient transfer capacity is available to implement all of the preferred schedules for electricity transmission simultaneously.

Congestion avoidance: In frame relay a method using two bits that explicitly notify the source and destination of congestion.

Congestion control: A method to manage network and internetwork traffic to improve throughput.

Conjunctive Test: A parametric or specific test of a protection system on all components and auxiliary equipment that are connected.

Conjunctive Test: a protection test for all connected compounds and auxiliary equipments.

Connect time (1). : A measure of system usage: the interval during which the user was on-line for a session.

Connect time (2). : The interval during which a request for a connection is being completed.

Connected load: The sum of the continuous ratings or the capacities for a system, part of a system, or a customer's electric power consuming apparatus.

Connected Load: The combined continuous rating of all the equipment connected to the system or part of the system under consideration.

Connecting Block: A plastic block with metal wiring clips used to establish an electrical connection.

Connection: The physical connection (e.g., transmission lines, transformers, switch gear, etc.) between two electric systems permitting the transfer of electric energy in one or both directions.

Connection: That part of a circuit that has negligible impedance and that joins components, devices, etc., together.

Connection (1). : An established data communications path.

Connection (2). : The process of establishing that path.

Connection (3). : A point of attachment for that path.

Connection establishment: The preliminary setup necessary for a logical connection prior to actual data transfer.

Connection oriented network service(CONS): A network level data protocol with formal rules for establishment and termination of a connection.

Connection oriented services : Services for data transfer involving establishment and termination of a connection.

Connection oriented transmission: Data transfer involving establishment and termination of a connection.

Connection oriented transport service (COTS): A network level protocol with formal establishment and termination of a connection.

Connection request : A message sent to establish a connection.

Connection termination: A message sent to end a connection.

Connectionless network service (CLNS): A network level protocol without formal rules for connection establishment or termination.

Connectionless service: A service for data transfer without connection establishment or termination.

Connectionless service. : In a connectionless service, no circuit is set up between sender and recipient. Every unit of data that is exchanged is totally self contained and contains within it all of the necessary control information (e.g. Addresses of destination and sender) to ensure correct delivery.

Connectionless transmission: Data transfer without connection establishment or termination.

Connectionless transport service (CLTS): A transport level data transfer protocol without formal connection establishment or termination.

Connection-oriented service. : In a connection-oriented service, a dedicated circuit (real or virtual) is set up between two points and maintained for as long as the connection is required. A connection-oriented service has three phases; establishment, data transfer, release.

Connector: A conductive coupling device used to connect conductors together.

connector: The part of a cable coupler or of an appliance coupler which is provided with female contacts and is intended to be attached to the end of the flexible cable remote from the supply.

Connector: A device providing electrical connection/disconnections. It consists of a mating plug and receptacle. Various types of connectors include DIP, card edge, two-piece, hermaphroditic and wire-wrapping configurations. Multiple contact connectors join two or more conductors with others in one mechanical assembly.

Connector: Connector may be any device used to join any electrical circuit.

Connector: A mechanism used to unite two pieces of cable or cable to an apparatus, both physically and electrically.

Connector Discontinuity: An ohmic change in contact resistance.

Connector Grip: A Strain Relief Grip for specific Customers usually attached to a connector retaining nut.

Connector Insert: For connectors with metal shells, the insert holds contacts in proper arrangement while electrically insulating them from each other and from the shell.

Connector Shell: The case that encloses the connector insert and contact assembly. Shells of mating connectors can protect projecting contacts and provide proper alignment.

Connector. : An electrical device for making one or more connections.

Conservation: A reduction in energy consumption that corresponds with a reduction in service demand. Service demand can include buildings-sector end uses such as lighting, refrigeration, and heating; industrial processes; or vehicle transportation. Unlike energy efficiency, which is typically a technological measure, conservation is better associated with behavior. Examples of conservation include adjusting the thermostat to reduce the output of a heating unit, using occupancy sensors that turn off lights or appliances, and car-pooling.

conservation: Reducing energy consumption and energy waste using a strategy to attain higher efficiency in energy production and utilization, to accommodate behaviour to maximize personal welfare in response to changing prices, and shifting from scarce to more

plentiful energy resources.

Conservation feature: A feature in the building designed to reduce the usage of energy.

conservation of energy: The law of conservation of energy states that in any system energy cannot be created or destroyed.

conservation of mass: The law of conservation of mass states that in any system matter cannot be created or destroyed.

conservation of mass and energy: A principle resulting from Einstein's special theory of relativity, which combines the separate laws of conservation of mass and energy. It states that in any system the sum of the mass and energy remains constant.

conservation of momentum: The law of conservation of momentum states that for a perfectly elastic collision, the total momentum of two bodies before impact is equal to their total momentum of two bodies after impact.

Conservation program: A program in which a utility company furnishes home weatherization services free or at reduced cost or provides free or low cost devices for saving energy, such as energy efficient light bulbs, flow restrictors, weather stripping, and water heater insulation.

Console (1). : A long-range radio aid to navigation, the emissions of which, by means of their audio frequency modulation characteristics, enable bearings to be determined.

Console (2). : The device used by the operator, system manager, or maintenance technician to monitor or control computer, system, or network performance.

Consolidated entity: See Firm.

Consolidated Metropolitan Statistical Area (CMSA): An area that meets the requirements of a metropolitan statistical area, has a population of one million or more, and consists of two or more component parts that are recognized as primary metropolitan statistical areas.

Constant bit rate (CBR): The data rate of an ATM service class that is designed for customers requiring real time audio or video services.

Constant Current Charge: Charging technique where the output current of the charge source is held constant.

Constant Current Charge: it is a type of charging in which continuous constant current and variable voltage is given to the battery in case if batteries are capable to support both constant current and voltage .

Constant Current Source: Source which provides constant current to the output of a switching transistor, and allows the voltage at the output to vary from zero up to the supply voltage.

Constant Current Source: Source which provides constant current to the output of a switching transistor, and allows the voltage at the output to vary from zero up to the supply voltage.

Constant Potential Charge: Charging technique where the output voltage of the charge source is held constant and the current is limited only by the resistance of the battery.

Constant Potential Charge: In this case constant voltage and variable current input is given to batteries.

Constant-Speed Motor: A motor whose speed is either constant or varies little, such as synchronous motors, induction motors with low slip and ordinary direct-current shunt motors.

Constant-speed wind turbines: Turbines that operate at a constant rotor revolutions per minute (RPM) and are optimized for energy capture at a given rotor diameter at a particular speed in the wind power curve.

Constellation: A graphical representation of the phase and amplitude of different bit combinations in digital-to-analog modulation.

Constitute: A phase, or combination of phases, that occurs in a characteristic configuration in a microstructure.

Constitutional Diagram: A graphical representation of the temperature and composition limits of phase fields in an alloy system as they actually exist under specific conditions of heating and cooling (synonymous with phase diagram). A constitutional diagram may be, or may approximate, an equilibrium diagram, or may represent metastable conditions or phases. Compare equilibrium diagram.

Construction: An energy-consuming subsector of the industrial sector that consists of all facilities and equipment used to perform land preparation and construct, renovate, alter, install, maintain, or repair major infrastructure or individual systems therein. Infrastructure includes buildings; industrial plants; and other major structures, such as tanks, towers, monuments, roadways, tunnels, bridges, dams, pipelines, and transmission lines.

Construction costs (of the electric power industry): All direct and indirect costs incurred in acquiring and constructing electric utility plant and equipment and proportionate shares of common utility plants. Included are the cost of land and improvements, nuclear fuel and spare parts, allowance for funds used during construction, and general overheads capitalized, less the cost of acquiring plant and equipment previously operated in utility service.

Construction expenditures (of the electric power industry): The gross expenditures for construction costs (including the cost of replacing worn out plants), and electric construction costs, and land held for future use.

Construction pipeline (of a nuclear reactor): The various stages involved in the acquisition of a nuclear reactor by a utility. The events that define these stages are the ordering of a reactor, the licensing process, and the physical construction of the nuclear generating unit. A reactor is said to be "in the pipeline" when the reactor is ordered and "out of the pipeline" when it completes low power testing and begins operation toward full power.

Construction work in progress (CWIP): The balance shown on a utility's balance sheet for construction work not yet completed but in process. This balance line item may or may not be included in the rate base.

Constructive surplus or deficit: The amounts representing the exchange of services, supplies, etc., between the utility department and the municipality and its other departments without charge or at a reduced charge. Charges to this account include utility and other services, supplies, etc., furnished by the utility department to the municipality or its other departments without charge, or the amount of the reduction, if furnished at a reduced charge. Credits to the account consist of services, supplies, office space, etc., furnished by the municipality to the utility department without charge on the amount of the reduction, if furnished at a reduced charge.

consumer: A person or organisation that purchases a product, usually electricity.

Consumer (energy): Any individually metered dwelling, building, establishment, or location using natural gas, synthetic natural gas, and/or mixtures of natural and supplemental gas for

feedstock or as fuel for any purpose other than in oil or gas lease operations; natural gas treating or processing plants; or pipeline, distribution, or storage compressors.

Consumer charge: An amount charged periodically to a consumer for such utility costs as billing and meter reading, without regard to demand or energy consumption.

consumer education : Efforts to provide consumers with skills and knowledge to use their resources wisely in the marketplace.

Consumer Price Index (CPI): These prices are collected in 85 urban areas selected to represent all urban consumers about 80 percent of the total U.S. population. The service stations are selected initially and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full, mini, and self service).

consumer service charge : Portion of the consumer's bill which remains the same from month to month. The charge is determined separately from the amount of energy used based on the costs associated with connecting a consumer to the utility's distribution system, including the service connection and metering equipment. This charge also recovers expenses such as meter reading, billing costs, consumer accounting expenses records and collections, and a portion of general plant items such as office space for consumer service personnel.

consumer unit: (may also be known as a consumer control unit or electricity control unit) A particular type of distribution board comprising a co-ordinated assembly for the control and distribution of electrical energy, principally in domestic premises, incorporating manual means of double pole isolation on the incoming circuit(s) and an assembly of one or more fuses, circuit breakers, residual current operated devices or signalling and other devices purposely manufactured for such use.

Consumption: Measures the physical use of steel by end users. Steel consumption estimates, unlike steel demand figures, account for changes in inventories. Apparent Supply. Derived demand for steel using AISI reported steel mill shipments plus Census Bureau reported imports, less Census Bureau reported exports. Domestic market share percentages are based on this figure, which does not take into account any changes in inventory.

Consumption: See Energy consumption.

Consumption per square foot: The aggregate ratio of total consumption for a particular set of buildings to the total floorspace of those buildings.

Contact: The surface common to two conducting parts, united by pressure, for the purpose of carrying current.

Contact Bounce: the mechanical relay or any switch used to close the circuit

Contact Corrosion: When two dissimilar metals are in contact without a protective barrier between them and they are in the presence of liquid, an electrolytic cell is created. The degree of corrosion is dependent on the area in contact and the electro potential voltage of the metals concerned. The less noble of the metals is liable to be attacked, i.e. zinc will act as a protector of steel in sea water whereas copper or brass will attack the steel in the same environment.

Contact Discharge: The contact discharge is the method of testing in which the electrode of the test generator is kept in contact with the EUT or coupling plane and the discharge is actuated by the discharge switch within the generator.

Contact Plating: Plated-on metal applied to the base contact metal to provide the required contact resistance and/or wear resistance.

Contact point. : In air operations, the position at which a flight leader makes radio contact with an air control agency.

Contact report. : A report of visual, radio, sonar or radio contact with the enemy. The first report, giving the information immediately available when the contact is first made, is known as the initial contact report. Subsequent reports containing additional information are referred to as amplifying reports.

Contact Resistance: Maximum permitted electrical resistance of pin and socket contacts when assembled in a connector under typical service use.

Contact resistance: The resistance between metallic contacts and the semiconductor.

Contact Retainer: A device either on the contact or in the insert to retain the contact.

Contact Rolls: Metal rolls that are used in the chem. treat area. Electricity goes through these rolls.

Contact Size: Defines the largest size wire that can be used with the specific contact. By specification dimensioning, it also defines the diameter of the engagement end of the pin.

Contact, Female: A contact located in an insert or body in such a manner that the mating contact is inserted into the unit. It is similar in function to a socket contact.

Contact, Male: A contact located in an insert or body in such a manner that the mating portion extends into the female contact. It is similar in function to a pin contact.

contactor: An electro-mechanical device that is operated by an electric coil and allows automatic or remote operation to repeatedly establish or interrupt an electrical power circuit. A contactor provides no overload protection as required for motor loads.

Contact: A device for repeatedly establishing or interrupting an electrical circuit under normal conditions. It is usually magnetically operated.

Container: In extrusion: The strong chamber in a extrusion press that holds the billett while it is extruded through a die at one end, under pressure from a ram entering at the other end.

Containment. : Containment is the act of stopping the intrusion and preventing or limiting the damage caused by an intrusion. Damage refers to any violation of security policy and includes any unauthorised disclosure, removal, destruction, modification or interruption of information, cis or assets. The nature of the containment activity will depend upon the type of threat, the potential access to information and resources, and the sensitivity or criticality of the cis. (au)

Contamination: 1) Radioactive deposition of radioactive material in any place where it is not desired, and particularly in any place where its presence may be harmful. The harm may be in vitiating the validity of an experiment or a procedure, or in actually being a source of danger to personnel, 2) presence of small percentages of deleterious elements in an alloy adversely affecting the alloy's mechanical properties and/or casting soundness.

Contango: Market condition where the spot price is less than the three month delivery price. This is considered the normal market state because the costs of storing and shipping metal are assumed to be higher in three months than at present (See Backwardation).

Contended access. : (in lan technology) a shared access method that allows stations to use the medium on a first-come, first-served basis. Contrast with explicit access.

Contention: An access method in which the two or more devices try to transmit at the same time on the channel.

Contention. : The facility provided by the dial network or a data pabx which allows multiple

terminals to compete on a first-come, first-served basis for a smaller number of computer ports.

continuity: Continuous, without a break.

Continuity: The state of being whole, unbroken.

Continuity Check: A test performed on a length of finished wire or cable to determine if the electrical current flows continuously throughout the length. Each conductor may also be checked against each other to ascertain that no short exists.

Continuity Test: A test performed on a conductor to determine if it is unbroken throughout its length

Continuity Test: Checking the flow of current in any system.

Continuity Testers: A continuity tester is an electrical measurement device that checks to see if an electrical path is complete, or continuous, from one point to another. A continuity tester uses a battery or other source to place a voltage in series with the circuit. If the path is completed and current flows, an LED or other type of indicator provides feedback to the user.

Continuous Anneal: A process by which the steel is rapidly heated, soaked and cooled at a confirmed rate by passing the coil at a relatively high speed through a furnace consisting of numerous sections.

Continuous Annealing Furnace: Furnace in which castings are annealed or heat treated by passing through different zones at constant temperatures.

Continuous auger machine: is used in mining coalbeds less than 3 feet thick. The auger has a cutting depth of about 5 feet and is 20 to 28 inches in diameter. Continuous auger mining usually uses a conveyor belt to haul the coal to the surface.

Continuous Blow Down: (Continuous Concentration) The process of removing undesired solids from the boiler feed water at the upper drum by means of a skimming header. Chemical analysis of the blow down establishes treatment needs and helps maintain optimum feed water quality.

continuous carrier. : A signal wherein transmission of the carrier is continuous, not pulsed on and off. A continuous carrier signal may be amplitude, phase or frequency modulated.

Continuous Current: Steady-state current. AC or DC.

Continuous delivery energy sources: Those energy sources provided continuously to a building.

Continuous Desulfurization: A process of removing sulfur from molten ferrous alloys on a continuous basis.

Continuous Furnace: Furnace, in which the material being heated moves steadily through the furnace.

Continuous Load: An electrical load in which the maximum current is expected to continue for three hours or more

Continuous Load: A load where the maximum current is expected to continue for three hours or more. Rating of the branch circuit protection device shall not be less than 125% of the continuous load.

Continuous Load: Continuous load may be any load for prolonged time or for undefined time on any system. This may bring some undesirable changes to the systems. A continuity test is performed by placing a small voltage across the path.

Continuous mining: A form of room pillar mining in which a continuous mining machine

extracts and removes coal from the working face in one operation; no blasting is required. Contour mining is practiced when the coal is mined on hillsides. The mining follows the contour of the hillside until the overburden becomes uneconomical to remove. This method creates a shelf, or bench, on the hillside. Several variations of contour mining have been developed to control environmental problems. These methods include slope reduction (overburden is spread so that the angle of the slope on the hillside is reduced), head-of-hollow fill (overburden is placed in narrow V-shaped valleys to control erosion), and block-cut (overburden from current mining is backfilled into a previously mined cut).

Continuous mining machine: , used during continuous mining, cuts or rips coal from the face and loads it into shuttle cars or conveyors in one operation. It eliminates the use of blasting devices and performs many functions of other equipment such as drills, cutting machines, and loaders. A continuous mining machine typically has a turning "drum" with sharp bits that cut and dig out the coal for 16 to 22 feet before mining stops so that the mined area can be supported with roof bolts. This machine can mine coal at the rate of 8 to 15 tons per minute.

Continuous Phase: In an alloy or portion of an alloy containing more than one phase, the phase that forms the background or matrix in which the other phase or phases are present as isolated volumes.

Continuous Pickling: Passing sheet or strip metal continuously through a series of pickling and washing tanks.

Continuous Rating: The constant voltage or current that a device is capable of sustaining. This is a design parameter of the device.

Continuous Rating: The capability of any system for producing the continuously power over the year.

Continuous Rating: The maximum constant load that can be carried continuously without exceeding established temperature rise limitations under prescribed conditions.

Continuous Strip Mill: A series of synchronized rolling mill stands in which coiled flat rolled metal entering the first pass (or stand) moves in a straight line and is continuously reduced in thickness (not width) at each subsequent pass. The finished strip is recoiled upon leaving the final or finishing pass.

Continuous Tapping: A furnace or holding ladle that is made of discharge molten metal continuously during normal operation.

Continuous Variable Crown System: (C.V.C. System) Hydraulic system that supplies the force to all the cylinders associated with work roll balance and bending and back up roll balance (also supplies force for work roll shifting).

Continuous wave (cw). : A continuous signal, not pulsed on and off. A cw signal may be amplitude, phase or frequency modulated.

Continuous Weld: Continuously welding one coil to another at the entry end and splitting off coils of a specific weight at delivery end.

Continuous : See Continuous Rating.

Continuously variable. : Capable of having one of an infinite number of values, differing from each other by an arbitrary small amount; usually used to describe analogue signals or analogue transmission.

Contract Assembly: Contract assembly is a production and distribution service in which the

assembly service provides the compilation or assembly of a product and prepares it for delivery. The contract assembly service is provided in many different industries, with the exact services and cost structures dictated primarily by the industry and the services offered.

Contract Manufacturing: Contract manufacturing is the business of providing manufacturing services on an as-needed basis to other companies. Contract manufacturing is a form of outsourcing and allows one company to leverage the expertise and equipment of a knowledgeable manufacturer to create products.

Contract price: The delivery price determined when a contract is signed. It can be a fixed price or a base price escalated according to a given formula.

contract price : Price marketed on a contract basis for one or more years.

Contract Production: . Natural gas liquids accruing to a company because of its ownership of liquids extraction facilities that it uses to extract liquids from gas belonging to others, thereby earning a portion of the resultant liquids.

Contract receipts: Purchases based on a negotiated agreement that generally covers a period of 1 or more years.

Contract Reserves: . Natural gas liquid reserves corresponding to the contract production defined above.

Contract Sales: Steel products committed to customers through price agreements extending 3 to 12 months. About one half of all flat rolled steel is sold on this basis, primarily because the auto companies sign agreements to cover at least one year's model. Price increases that the steel mills might announce during the year do not generally affect the revenues from the contract side of the business.

Contracted gas: Any gas for which Interstate Pipeline has a contract to purchase from any domestic or foreign source that cannot be identified to a specific field or group. This includes tailgate plant purchases, single meter point purchases, pipeline purchases, natural gas imports, SNG purchases, and LNG purchases.

Contraction Cracks: Cracks formed by restriction of the metal while contracting in the mold; may occur just after solidification (called a hot tear) or a short time after the casting has been removed from the mold. See Hot Tears

Contraction Rule: See Shrinkage, Patternmaker's

Contrahelical: A term meaning the application of two or more layers of spirally twisted, served, or wrapped materials where each successive layer is wrapped in the opposite direction to the preceding layer.

Contribution to net income: The FRS (Financial Reporting System survey) segment equivalent to net income. However, some consolidated items of revenue and expense are not allocated to the segments, and therefore they are not equivalent in a strict sense. The largest item not allocated to the segments is interest expense since this is regarded as a corporate level item for FRS purposes.

Control: Including the terms "controlling," "controlled by," and "under common control with," means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting shares, by contract, or otherwise.

Control Cable: A multiconductor cable made for operation in control or signal circuits, usually flexible, relatively small in size, and with relatively small current ratings.

Control character: A character in BSC used to convey information about the functionality of the D channel.

Control character. : A non-printing character used to start, stop, or modify a function; cr is an example to a control character.

Control House: The substation control house contains switchboard panels, batteries, battery chargers, supervisory control, power-line carrier, meters, and relays. The control house provides all weather protection and security for the control equipment. It is also called a doghouse.

Control Panels: Control panels contain meters, control switches and recorders located in the control building, also called a doghouse. These are used to control the substation equipment, to send power from one circuit to another or to open or shut down circuits when needed.

Control rods: Devices to absorb neutrons so that the chain reaction in a reactor core may be slowed or stopped by inserting them further, or accelerated by withdrawing them.

Control signal. : A modem interface signal used to announce, start, stop, or modify a function; for example, cd is an rs-232 control signal that announces the presence of a carrier.

Control Stool: Stool used to monitor the annealing temperature and gas stream. A probe is inserted into the test area, and readings are taken to determine the quality of the annealing process.

Control Switch: A manually operated switch for controlling power operated switches and circuit breakers.

Control total: The number of elements in the population or a subset of the population. The sample weights for the observed elements in a survey are adjusted so that they add up to the control total. The value of a control total is obtained from an outside source. The control totals are given by the number of households in one of the 12 cells by categorizing households by the four Census regions and by three categories of metropolitan status (Metropolitan Statistical Area central city, Metropolitan Statistical Area outside central city, and non Metropolitan Statistical Area). The control totals are obtained from the Current Population Survey.

Control tower. : A facility provided for the control of aircraft and vehicles, operating on and around a landing area.

Control unit. : In an ibm host system, equipment coordinating the operation of an input/output device and the cpu. See cluster control unit, ccu and transmission control unit tcu.

Control Wires: Control wires are installed connecting the control house control panels to all the equipment in the substation. A typical substation control house contains several thousand feet of conduit and miles of control wire.

Controllability: The finest adjustable increment of a system.

Controlled Atmosphere: Any gas or mixture of gases that prevents or retards oxidation and decarburization.

Controlled Atmosphere Furnaces: A furnace used for bright annealing into which specially prepared gases are introduced for the purpose of maintaining a neutral atmosphere so that no oxidizing reaction between metal and atmosphere takes place.

Controlled Cooling: See Cooling, Controlled

Controller Area Network: A serial bus developed by Bosch for use in automotive in vehicle communications. With added communication layers, is the foundation of Device Net

industrial automation protocol.

Controllers: Devices that are used to control the flow of the water and gas in the sinter machine as well as to control the louvers on the fans.

Convection: The motion resulting in a fluid from the differences in density. In heat transmission, this meaning has been extended to include both forced and natural motion or circulation.

convection: Transference of heat through a liquid or gas by the actual movement of the fluid.

Convection: A conveying or transference of heat or electricity by moving particles of matter.

Convictional encryption: A method of encryption in which the encryption and decryption algorithms use the same key, which is kept secret.

Conventional blendstock for oxygenate blending (CBOB): Motor gasoline blending components intended for blending with oxygenates to produce finished conventional motor gasoline.

Conventional current: A direction flow assignment that has current flowing from positive to negative.

Conventional Forging: A forging characterized by design complexity and tolerances that fall within the broad range of general forging practice.

Conventional gasoline: Finished motor gasoline not included in the oxygenated or reformulated gasoline categories. Note This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock.

Conventional hydroelectric plant: A plant in which all of the power is produced from natural streamflow as regulated by available storage.

Conventional mill (uranium): A facility engineered and built principally for processing of uranium ore materials mined from the earth and the recovery, by chemical treatment in the mill's circuits, of uranium and/or other valued coproduct components from the processed one.

Conventional mining: The oldest form of room pillar mining, which consists of a series of operations that involve cutting the coal bed, so it breaks easily when blasted with explosives or high pressure air, and then loading the broken coal.

Conventional oil and natural gas production: Crude oil and natural gas that is produced by a well drilled into a geologic formation in which the reservoir and fluid characteristics permit the oil and natural gas to readily flow to the wellbore.

Conventionally fueled vehicle: A vehicle that runs on petroleum-based fuels such as motor gasoline or diesel fuel.

Convergence sub layer (CS): In ATM protocol, the upper AAL sub layer that adds a header or a trailer to the user data.

Conversion: Chemical process turning U₃O₈ into UF₆ preparatory to enrichment.

Conversion Coefficient: The relationship of the value of the measured to the corresponding value of the output.

Conversion Coefficient: it defines the rate of internal Conversion Coefficient

Conversion company: An organization that performs vehicle conversions on a commercial basis.

Conversion Cost: Resources spent to process material in a single stage, from one type to another. The costs of converting iron ore to hot metal or pickling hot rolled coil can be

isolated for analysis.

Conversion efficiency (cell or module): The ratio of the electric energy produced by a photovoltaic device (under one-sun conditions) to the energy from sunlight incident upon the cell.

Conversion factor: A factor for converting data between one unit of measurement and another (such as between short tons and British thermal units, or between barrels and gallons). (See Appendices (heat rates, conversion factors, and more) for further information on conversion factors.) See Btu Conversion Factor and Thermal Conversion Factor.

Conversion Time: Time required converting an analog or digital signal into its converse.

Converted (alternative-fuel) vehicle: A vehicle originally designed to operate on gasoline/diesel that was modified or altered to run on an alternative fuel after its initial delivery to an end-user.

Converter: A furnace in which air is blown through the molten bath of crude metal or matte for the purpose of oxidizing impurities.

converter: A device which changes electrical energy from one form to another, such as from alternating current to direct current.

Converter: A device which changes electrical energy from one form to another. There are several types of converters.

Converter Stations: Converter stations are located at the terminals of a DC transmission line. Converter stations change alternating current into direct current and invert direct current to alternating current.

Converter/Processor: Demand from steel customers such as rerollers and tube makers, which process steel into a more finished state, such as pipe, tubing and cold rolled strip, before selling it to end users. Such steel generally is not sold on contract, making the converter segment of the mills' revenues more price sensitive than their supply contracts to the auto manufacturers.

Convertible Jet Pumps: A pump is a mechanical device used to drive a fluid or gas from one place to another. A convertible jet pump is a specialized well pump used to draw from either shallow or deep wells. The arrangement of a convertible jet pump can be modified to switch from a shallow well application to a deep well application. The size of the pump will dictate the maximum depth at which the pump will work.

Convery, Vibratory: A materials handling device used usually with shakeout operations, to help clean sand from the castings as they are moved from one place to another in the foundry and as a feeding device to regulate materials flow. Operations with vibrational energy.

Convex: The curved surface of a cylinder as a sphere when viewed from without.

Conveyor: A mechanical apparatus for carrying or transporting materials from place to place. Types include apron, belt, chain, gravity, roller, monorail, overhead, pneumatic, vibrating, etc.

Conveyor Belt: A continuously moving belt used in an automated or semiautomated foundry to move materials from one station to another.

Conveyor Belt Splicing: Converyor belt splicing is the process of joining two or more pieces of conveyer belt for the purpose of either lengthening or repairing the belt. The splicing process, materials required, and equipment needed varies and is dependent on the type of belt being spliced. The two methods of splicing are mechanical splicing and

vulcanization. In mechanical splicing, hardware such as hinges, plates, or other mechanical connectors are used to make the splice. Vulcanization is a process that can only be used on rubber conveyor belts and uses heat, pressure or chemicals to create a bond between the pieces being spliced.

Conveyor Screw: Rotary worm type blade used to move materials in automated core and mold making and other continuous sand mixing operations.

Conveyor, Pallet: A materials handling device that holds one or more molds and transports them from the molding station through pouring to shakeout.

Conveyor, Pneumatic Tube: An air tube means of moving materials from one place to another, primarily orders, light metal samples, and sand and other finely divided materials, as bentonite.

Conveyor, Roller: A line of conveyance in an automated or semiautomated foundry which employs a series of steel rollers for moving objects.

Conveyor, Slat: A materials handling device built on a continuous belt of metal slats that moves granular materials and castings throughout a foundry.

Conveyors: A conveyor is any mechanical device used to transfer material from one location to another. Conveyors can be seen in assembly lines in industrial production plants, package and baggage handling systems, and in the distribution and processing of solid materials.

convolution: The convolution of two signals consists of time-reversing one of the signals, shifting it, and multiplying it point by point with the second signal, and integrating the product. It is used to characterise physical systems.

Coolant: The liquid or gas used to transfer heat from the reactor core to the steam generators or directly to the turbines.

Cooler Machine: A machine used to cool sinters before placing them on the conveyor belt.

Cooling: Conditioning of room air for human comfort by a refrigeration unit (such as an air conditioner or heat pump) or by circulating chilled water through a central cooling or district cooling system. Use of fans or blowers by themselves, without chilled air or water, is not included in this definition of cooling.

Cooling Cover: A cylindrical cover which is placed over the coils and the heat cover once the furnace is removed. This cover contains a fan that aids in the cooling of the coils. The North Anneal has one cooling cover.

Cooling Curve: A curve showing the relationship between time and temperature during the solidification and cooling of a metal sample. Since most phase changes involve evolution or absorption of heat, there may be abrupt changes in the slope of the curve.

Cooling Degree Days (CDD): A measure of how warm a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the base temperature (65 degrees) from the average of the day's high and low temperatures, with negative values set equal to zero. Each day's cooling degree days are summed to create a cooling degree day measure for a specified reference period. Cooling degree days are used in energy analysis as an indicator of air conditioning energy requirements or use.

Cooling Fin: See Cracking Strip

Cooling Lines: The water lines that go to the bearings on a pump to keep the bearings cool.

Cooling pond: A natural or manmade body of water that is used for dissipating waste heat

from power plants.

Cooling system: An equipment system that provides water to the condensers and includes water intakes and outlets; cooling towers; and ponds, pumps, and pipes.

Cooling Tower: 1) The heat exchanger and everything associated with it that removes the heat from the coolant used in the cooling system. This device is located outdoors. 2) Tower in the Sheet Mill that suspends the strip that allows the zinc to cool and dry before the strip contacts any rolls.

Cooling Towers: A cooling tower is a heat transfer device used to remove excess heat from a process and dump it into the air. Cooling towers come in various shapes and sizes, including large towers used in energy production plants and smaller rooftop units used in industrial manufacturing plants.

Cooling Unit: Consists of the cooler and all the devices needed for the cooler's operation.

Cooling Water: Water that keeps the packing cool on the circulator and feed water pumps.

Cooling, Controlled: A process of cooling from an elevated temperature in a predetermined manner used to produce a desired microstructure to avoid hardening, cracking or internal damage

Cooperative electric utility: An electric utility legally established to be owned by and operated for the benefit of those using its service. The utility company will generate, transmit, and/or distribute supplies of electric energy to a specified area not being serviced by another utility. Such ventures are generally exempt from Federal income tax laws. Most electric cooperatives have been initially financed by the Rural Utilities Service (prior Rural Electrification Administration), U.S. Department of Agriculture.

cooperative electric utility : A utility established to be owned by and operated for the benefit of those using its services.

Coordinate Measuring Machines - Cmm Software: A coordinate measuring machine (CMM) is a mechanical device used to measure the physical dimensions of an object. A CMM is often used in manufacturing to inspect and record the dimensions of a part for comparison to the specified dimensions of the object. The CMM is controlled by software which controls the motion of the measurement probe along the axes of the machine. An electronic representation of the part is input into the CMM software and the probe is moved to a reference location. Once the reference location is established, the software follows a prescribed inspection path, probing the surface of the part at discrete locations and recording the location relative to the reference point. The CMM software can be specific to the machine being used or part of a commercial computer aided design/manufacturing (CAD/CAM) software package.

co-ordinated: Usually refers to characteristics which are co-ordinated to give optimum performance.

Coordinates: it is geometrical positioning system. It defines the position of everything in specific numeric values. Basically there are three coordinates known as X Y Z.

Coordination: Relating to the protection of the power system, the process of coordinating the fuse, breakers and reclosers of a system so to allow the downstream devices to operate first.

Coordination area. : The area associated with an earth station outside of which a terrestrial station sharing the same frequency band neither causes nor is subject to interfering emissions greater than a permissible level.

Coordination contour. : The line enclosing the coordination area.

Coordination distance. : Distance on a given azimuth from an earth station beyond which a terrestrial station sharing the same frequency band neither causes nor is subject to interfering emissions greater than a permissible level.

Coordination service: The sale, exchange, or transmission of electricity between two or more electric utilities that typically have sufficient generation and transmission capacity to supply their load requirements under normal conditions.

Coordination service pricing: The typical price components of a bulk power coordination sale are an energy charge, a capacity, or reservation charge, and an adder. The price for a particular sale may embody some or all of these components. The energy charge is made on a per-kilowatt basis and is intended to recover the seller's system incremental variable costs of making a sale. Because the nonfuel expenses are usually hard to quantify, and small relative to fuel expense, energy charges quoted are usually based on fuel cost. A capacity charge is set at a certain level per kilowatt and is normally paid whether or not energy is taken by the buyer. An adder is added to that energy charge to recover the hard quantify nonfuel variable costs. There are three types of adders percentage, fixed, and split savings. A percentage adder increases the energy charge by a certain percentage. A fixed adder adds a fixed amount per kilowatt hour to the energy charge. Split savings adders are used only in economy energy transactions. They split production costs savings between the seller and the buyer by adding one half of the savings to the energy cost.

Cope: Upper or topmost section of a flask, mold or pattern.

Cope, False: Temporary cope used only in forming the parting and therefore not a part of the finished mold

Coping Out: The extension of sand of the cope downward into the drag, where it takes an impression of a pattern.

Coplanar Line: The line lie on same plane are known as the coplanar lines .if we will some draw lines on a paper all will be on same plane .

Copolymer: Chains of unlike molecules that are chemically bonded together

Copolymer: The polymers made up of two different types of monomers is known as copolymer. Even that monomers are formed by same type of molecules.

Co-Polymer: A term used to designate that two or more monomers are polymerized together to form a different material.

Copper: The principle electrical conductor.

Copper Cake: A by product of electrolytic zinc refining, usually containing a fair amount of cobalt.

Copper indium diselenide (CuInSe₂): A polycrystalline thin-film photovoltaic material (sometimes incorporating gallium (CIGS) and/or sulfur).

copper loss: Same as conductor loss. Conductors were traditionally made of copper, hence the name.

Copperclad: A thin coating of copper fused to an aluminum core. Used in some building wires (#12 and larger).

Copperweld® (CW): A copper covering over a high strength steel core used for its corrosion resistance, high electrical conductivity, and ductility. ®Copperweld Enterprises

Copy (radio communication). : To maintain a continuous receiver watch keeping a complete

log. See cover (radio communication) and guard (radio communication).

Cord: A small, very flexible insulated cable.

Cord connector: A portable receptacle which is attached to, or provided with, means for attachment to a flexible cord and which is not intended for fixed mounting.

Cord of wood: A cord of wood measures 4 feet by 4 feet by 8 feet, or 128 cubic feet.

Cord Sets: Portable cords, fitted with any type of wiring device at one or both ends.

Core: The central part of a nuclear reactor containing the fuel elements and control devices.

Core: In cables, a term used to denote a component or assembly of components over which other materials are applied, such as, additional components, shield, sheath, or armor.

Core Assembly: Putting together a complex core made of a number of sections.

Core Baking Dielectric: Heating cores to baking temperatures by means of high frequency dielectric equipment; particularly adapted to thermo setting resin core binders.

Core Balance Current Transformer: A ringtype current transformer in which all primary conductors are passed through the aperture making any secondary current proportional to any imbalance in current.

Core Barrel: Pipe shaped device upon which a cylindrical core is formed.

Core Binder: Any material used to hold the grains of core sand together.

Core Blow: A gas pocket in a casting adjacent to a core cavity caused by entrapping gases from the core.

Core Box, Combination: Core box and core driers from the same pattern. One half is used as a half core box and a core drier.

Core Branch: Part of a core assembly.

Core Breaker: A machine for crushing cores or for removing cores from castings.

Core Cavity: The interior form of a core box that gives shape to the core. Also, the cavity produced in a casting by use of a core.

Core Collapsibility: The rate of disintegration of the core at elevated temperature.

Core Compound: A commercial mixture used as a binder in core sand.

Core Crab: An iron framework embedded in a large core to stiffen it and for convenience in handling.

Core Density: 1) Permeability of core or 2) weight per unit volume.

Core Driers: Supports used to hold cores in shape while being baked; constructed from metals or sand for conventional baking, or from plastic material for use with dielectric core baking equipment.

Core Extruder: A special shell core making machine that produces a continuous length of cores, usually of cylindrical cross section.

Core Filler: Material used in place of sand in the interiors of large cores coke, cinder, sawdust, etc., usually added to aid collapsibility.

Core Fin: A casting defect, a depression in the casting caused by a fin on the core that was not removed before the core was set, or by paste that has oozed out from between the joints.

Core Float: A casting defect caused by core movement towards the cope surface of the mold, as a result of core buoyancy in liquid steel, resulting in a deviation from the intended wall thickness.

Core Frame: Frame of skeleton construction used instead of a complete core box in forming intermediate and large cores.

Core Grinder: Machine for grinding a taper on the end of a cylindrical core or to grind a core to a specified dimension, usually flat face.

Core Gum: A pitch material used as a core binder.

Core Hardness: The ability of a core to resist scratching or abrasion.

Core Jig: A device for setting core assemblies outside of the mold and placing the whole assembly in the mold.

Core Knockout Machine: A mechanical device for removing cores from castings.

Core Lightener: A core material of any size and shape used to lighten pattern castings and match plates.

Core Loss: Power loss in a transformer due to excitation of the magnetic circuit (core). No load losses are present at all times when the transformer has voltage applied.

core loss: The Loss occurring in a magnetic core due to alternating magnetisation. It is the sum of the hysteresis loss and the eddy current loss.

Core Loss: The rate of energy conversion into heat in a magnetic material due to the presence of an alternating or pulsating magnetic field. Core losses are a result of an alternating magnetic field in a core material.

Core Mading Machine: A device to make cores.

Core Maker: A core seat so shaped or arranged that the core will register correctly in the mold; also termed locator, indicator, register, telltale.

Core Mud: A daubing mixture used to correct defect in cores.

Core Refractiveness: The ability of a core to resist breakdown when exposed to heat.

Core Rod: A wire or rod of steel used to reinforce and stiffen the core.

Core Setting Jig: A device used to help set a core into the mold.

Core Shift: A variation from specified dimensions of a cored section due to a change in position of the core or misalignment of cores in assembling.

Core Shooter: A device using low air pressure to fluidize the sand mix which is released quickly in such a way as to force it into a core box.

Core Spindle: A shaft on which a core barrel is rotated in making cylindrical cores.

Core Sprayer: A device for spraying a coating on cores.

Core Truck: Truck or carriage used for transporting cores.

Core Vents: 1) holes made in the core for escape of gas. 2) A metal screen or slotted piece used to form the vent passage in the core box employed in a core blowing machine. 3) A wax product, round or oval in form, used to form the vent passage in a core.

Coreless Induction Furnace: See Induction Furnace

Coremaker: A craftsman skilled in the production of cores for foundry use.

Corer, Sag: A decrease in the height of a core, usually accompanied by an increase in width, as a result of insufficient green strength of the sand to support its own weight.

Coreroom: Department of the foundry in which cores are made.

Corex: COREX is a coal based smelting process that yields hot metal or pig iron. The output can be used by integrated mills or EAF mills. HOWThe process gasifies non coking coal in a smelting reactor, which also produces liquid iron. The gasified coal is fed into a shaft furnace, where it removes oxygen from iron ore lumps, pellets or sinter; the reduced iron is then fed to the smelting reactor.

Coring: A variation of composition between the center and surface of a unit of structure (such

as a dendrite, a grain or a carbide particle) resulting from non equilibrium growth over a range of temperature.

Coring Up: Placement of cores chills, and chaplets in mold halves before closing the mold.

Corner reflector. : A device, normally consisting of two metallic surfaces or screen perpendicular to one another, designed to act as a radar target or marker.

Corners: Four corners on each boiler where the oil guns and the oil and steam auto valves for the oil guns are located.

Cornerslick (Inside And Outside Corners): A molder's tool used for repairing and slicking the sand in molds. Used primarily on Dry sand and loam.

Corona: An electrical discharge at the surface of a conductor accompanied by the ionization of the surrounding atmosphere. It can be accompanied by light and audible noise.

Corona: Corona is a luminous, audible discharge that occurs when there is an excessive localized electric field gradient upon an object that causes the ionization and possible electrical breakdown of the air adjacent to this point.

Corona: A discharge due to ionization of a gas (usually air) due to a potential gradient exceeding a certain critical value.

Corona Discharge: See Corona Discharge.

corona discharge: Bluish white luminous discharge which appears surrounding a conductor surface at a field exceeding corona inception, but not being sufficient to cause sparking or flash over.

Corona Discharge: It is a type of electrical discharge occurs due to electrically charged ionization of a fluid or gas .

corona inception: Inception of the ionisation of the air on the surface of a conductor, caused by the voltage gradient exceeding a critical value, but not being sufficient to cause sparking or flash over.

Corona Initiation Point: The critical value in the application of an electrical potential where corona is first noticed by the detection device.

corona loss: power loss due to corona.

Corrective Effective Temperature Chart: A chart on which information can be plotted resulting in an adjustment temperature reading more indicative of human comfort.

Corrective Leveling: Capability of a leveling machine to remove or reduce shape defects across the strip, coil, or sheet, in addition to flattening lengthwise curvatures. Generally employs 17 to 23 small diameter rolls with adjustable back ups for varying nest across face of machine.

Correlate (1). : To associate radar data with target position in active or passive tracking.

Correlate (2). : To coherently compare jamming signals from two receivers to obtain a time delay and thus a line of target position.

Correlation (statistical term): In its most general sense, correlation denotes the interdependence between quantitative or qualitative data. It would include the association of dichotomized attributes and the contingency of multiple classified attributes. The concept is quite general and may be extended to more than two variates. The word is most frequently used in a somewhat narrower sense to denote the relationship between measurable variates or ranks.

correlation techniques. : In electronic warfare. The comparison of two or more signals

emanating from a single source (but separated by transmission path or time) for the purpose of differentiating between real targets and clutter or jamming.

corrosion: Surface chemical action, especially on metals, by the action of moisture, air or chemicals.

Corrosion: The process or result of a material being eaten or worn away, usually by chemical reaction.

Corrosion Analysis: Corrosion analysis is an engineering service focused on determining the causes of and solutions for corrosion in a particular situation. Corrosion analysis may involve chemical analysis of the corrosion product, corrosion testing, and may include a corrosion monitoring system.

Corrosion Fatigue: Effect of the application of repeated or fluctuating stresses in a corrosive environment characterized by shorter life than would be encountered as a result of either their repeated or fluctuating stresses alone or the corrosive environment alone.

Corrosion Index: A number expressing the maximum depth in mils to which corrosion would penetrate in one year on the basis of a linear extrapolation of the penetration occurring during the lifetime of a given test or service.

Corrosion Investigation: Corrosion investigation is an engineering service in which the causes and mechanisms of corrosion are sought. A corrosion investigation will analyze the type of corrosion, the corrosive deposits and the resulting effect on the material. These observations will then be used to try to identify the root cause of the corrosion and how to prevent or reduce the likelihood of corrosion in the future.

Corrosion Monitoring: Corrosion monitoring is the process of watching for the onset and progression of corrosion in a fluid-based system in order to prevent catastrophic problems resulting from corrosion-related failure. The process is very common in the marine industry, in off-shore oil drilling platforms, and in fluid piping systems where the risk of corrosion is high and the impact is expensive. Due to the wide range of applications for corrosion monitoring, a wide range of solutions, measurement methods, and sensors exist.

Corrosion Resistance: The intrinsic ability of a material to resist degradation by corrosion. This ability can be enhanced by application of special coatings on the surface of the material.

Corrosion Resistant: A device constructed of special materials and/or suitably plated to withstand corrosive environments.

Corrosion Resistant Linings: Corrosion resistant linings are special coatings applied to the surface of a pipe or other component for the purpose of preventing the corrosive breakdown of the material being lined. The type of coating will vary depending on the material being covered and the fluid acting as the corrosive agent.

Corrosive Wear : Wear in which chemical or electrochemical reaction with the environment is significant.

Corrugated: As a defect. Alternate ridges and furrows. A series of deep short waves.

Corrugated Plastic: Corrugated plastic is a sheet product made by extruding plastic such that the resulting sheet has plastic surfaces on each side with a connective mesh between the two walls. The result is a lightweight but strong sheet of plastic popular in crafts and in making plastic containers and signs. Corrugated plastic is usually made from polypropylene, though other plastics are also used depending on the required strength and use of the corrugated sheet.

Corundum: Native alumina, or aluminum oxide, Al_2O_3 , occurring as rhombohedral crystals and also in masses and variously colored grains. Applied specifically to nontransparent kinds used as abrasives. It is hardest mineral except the diamond. Corundum and its artificial counterparts are abrasives especially suited to the grinding of metals.

Coslettizing: Producing a black, rust resisting surface on iron and steel by boiling for some hours in water containing phosphoric acid and iron filings.

Cost model for undiscovered resources: A computerized algorithm that uses the uranium endowment estimated for a given geological area and selected industry economic indexes to develop random variables that describe the undiscovered resources ultimately expected to be discovered in that area at chosen forward cost categories.

Cost of capital: The rate of return a utility must offer to obtain additional funds. The cost of capital varies with the leverage ratio, the effective income tax rate, conditions in the bond and stock markets, growth rate of the utility, its dividend strategy, stability of net income, the amount of new capital required, and other factors dealing with business and financial risks. It is a composite of the cost for debt interest, preferred stock dividends, and common stockholders' earnings that provide the facilities used in supplying utility service.

Cost of debt: The interest rate paid on new increments of debt capital multiplied by 1 minus the tax rate.

Cost of preferred stock: The preferred stock dividends divided by the net price of the preferred stock.

Cost of retained earnings: The residual of an entity's earnings over expenditures, including taxes and dividends, that are reinvested in its business. The cost of these funds is always lower than the cost of new equity capital, due to taxes and transactions costs. Therefore, the cost of retained earnings is the yield that retained earnings accrue upon reinvestment.

Cost of service: A ratemaking concept used for the design and development of rate schedules to ensure that the filed rate schedules recover only the cost of providing the electric service at issue. This concept attempts to correlate the utility's costs and revenue with the service provided to each of the various customer classes.

Cost, insurance, freight (CIF): A type of sale in which the buyer of the product agrees to pay a unit price that includes the f.o.b. value of the product at the point of origin plus all costs of insurance and transportation. This type of transaction differs from a "delivered" purchase in that the buyer accepts the quantity as determined at the loading port (as certified by the Bill of Lading and Quality Report) rather than pay on the basis of the quantity and quality ascertained at the unloading port. It is similar to the terms of an f.o.b. sale except that the seller, as a service for which he is compensated, arranges for transportation and insurance.

Cost-based rates (electric): A ratemaking concept used for the design and development of rate schedules to ensure that the filed rate schedules recover only the cost of providing the service. FERC definition

Cost-of-service regulation: A traditional electric utility regulation under which a utility is allowed to set rates based on the cost of providing service to customers and the right to earn a limited profit.

Costs (imports of natural gas): All expenses incurred by an importer up to the U.S. point of delivery for the reported quantity {of natural gas} imported.

co-tree of network: Complement of the tree of the network.

Cottrell Process: An electrostatic method of removing solid particles from gases.

Coulomb: Base unit of electrical charge equal to 6.25×10^{18} electrons. Named for Charles Coulomb, the French physicist who pioneered research into magnetism and electricity. He also formulated Coulomb's law which states that the force of attraction or repulsion between two charged bodies is equal to the product of the two charges and is inversely proportional to the square of the distance between them. $F = Q_1 \times Q_2 / d^2$

Coulomb: A unit of electric charge in SI units (International System of Units). A Coulomb is the quantity of electric charge that passes any cross-section of a conductor in one second when the current is maintained constant at one ampere.

Coulomb: coulomb is SI unit of charge .it is symbolized by Q or q $1C=1A*1s$

coulomb (C): SI unit of electric charge. One coulomb is equal to the amount of charge accumulated in one second by a current of one ampere.

coulomb's law: The force of attraction or repulsion between two point charges is proportional to the magnitude of the charges and inversely proportional to the square of the distance between them.

Count Rate Meter: A device which gives a continuous indication of the average rate of ionizing events.

Counter Bore: To enlarge the top part of a hole to specific size, as for the head of a socket head or cap screw. Also the tool that is used.

Counter EMF: Voltage or cell or battery opposing the voltage of the charging source.

Counter EMF: The EMF that oppose the current which induced it

Counter-Clockwise Convention: It is a convention that in any vector diagram, the leading vector be drawn counter-clockwise with respect to the lagging vector, as in the accompanying diagram, where OI represent the vector of a current in a simple alternating current circuit, lagging behind the vector OE or impressed voltage.

Counterpoise. : A conductor or group of conductors placed above the earth, used in association with an aerial system, insulated from the earth and replacing an earth system.

Counting Relay: A relay that counts the number of times it is energized and actuates an output after a desired count has been reached.

Country domain: A subdomain in the domain name system that uses two characters to identify a country as the last suffix.

Coupling: A mechanical device used to attach the shaft of an electric motor or other motive power device to a hydraulic pump.

coupling capacitor: A capacitor used to transmit an ac signal from one node to another.

Coupling Capacitors: Coupling capacitors are used to transmit communication signals to transmission lines. Some are used to measure the voltage in transmission lines.

coupling coefficient: The coupling coefficient of a pair of coils is a measure of the magnetic coupling between two coils.

Coupon: A piece of metal from which a test specimen is to be prepared often an extra piece (as on a casting or forging) or a separate piece made for test purposes (such as a test weldment)

Couriergram. : A message which would normally be sent by electrical means (but which cannot be so sent because circuits are not available) and which will be carried over all or part of its route by an authorised conveying agency which need not be part of the communications

system.

Courses: Alternate layers of material in a pattern, or brickwork.

Cover: A protective blanket laid on a melt to exclude oxidizing atmosphere and in the case of magnesium to prevent its igniting. Neutral covers simply protect metal from atmosphere; reacting covers contain an agent such as a deoxidizer.

Cover: Top surface section of the handhole for closing the top access opening of the box section.

Cover (radio communication). : The act of maintaining a continuous receiver watch with transmitter calibrated and available, but not necessarily available for immediate use. See copy (radio communication) and guard (radio communication).

Cover Core: A core set in place during the ramming of a mold to cover and complete a cavity partly formed by the withdrawal of a loose part of the pattern. Also used to form part or all of the cope surface of the mold cavity. A core placed over another core to create a flat parting line.

Cover Half: In Die casting, the stationary half of the die.

Coverage diagram. : A diagram showing the areas in the horizontal or vertical plane within which a radio transmitting installation is effective to a given standard.

Covered Electrode: A filler metal electrode, used in arc welding, consisting of a metal core wire with a relatively thick covering which provides protection for the molten metal from the atmosphere, improves the properties of the weld metal and stabilizes the arc. The covering is usually mineral or metal powders mixed with cellulose or other binder.

Covering: A material applied over a conductor generally for weather protection.

CPE: Chlorinated Polyethylene. CPE is a thermoplastic compound that is used to jacket certain types of power cable.

CPE: Chlorinated Polyethylene

CPE: Jacketing compound based on chlorinated polyethylene.

CPI : Consumer Price Index

Cpi, computer-pabx interface. : (in lan technology) a voice/data pabx standard (supported by dec) for using t1 transmission that involves 56 kbps channels, representing a move toward an open architecture. Compare with dmi.

CPU: An acronym used for the central processing unit of a computer.

Cpu, central processing unit. : Actually the heart of a computer, but often used as a synonym for computer.

CPUC: See California Public Utilities Commission (CPUC).

Cr: (Cold rolling) Rolling steel without first reheating it. This process reduces thickness of the steel, produces a smoother surface and makes it easier to machine.

Cr, carriage return. : An ascii or ebcdic control character used to position the print mechanism at the left margin on a printer - or the cursor at the left margin on a display terminal.

Crab: See Core Crab

Crack, Hot Tear: A rupture occurring in a casting at or just below the solidifying temperature by a pulling apart of the soft metal, caused by thermal contraction stresses. See also Quench Crack

Cracked Edges: Discontinuity or cracked condition on the edge of the strip.

Cracking: A coating defect consisting of a break in the cured film which exposes the bare substrate. Cracking usually occurs during fabrication of the coated plate when the coating is too brittle or the adhesion is too low.

Cracking Pressure: The pressure at which a pressure operated valve begins to pass fluid.

Cracking Strip: A fin of metal molded on the surface of a casting to prevent cracking.

Crane, Jib: A crane suspended from a jib.

Crane, Mobile: A crane supported on structure that rolls on wheels; may be moved manually or by its own power.

Crane, Wall Jib: A jib crane mounted on a wall rather than on an overhead beam.

Crash Deck: The impact deck between the discharge of the sinter machine and the sinter breaker.

C-Rate: Battery discharge current in amperes; numerically equal to rated capacity of a cell in amperehours.

Cratering: A coating defect consisting of small, apparently uncoated, spots of coated plate consisting of a very thin film of coating which was contaminated by oil, silicone, or foreign matter. Eyeholing is similar to cratering, but with metal exposure in the crater.

Crawler Excavators: A crawler excavator is a construction machine used for excavating rock and soil and then loading the material into trucks or moving it to other locations. The crawler term refers to the use of a pair of large tracks instead of tires for moving the equipment around. The boom, or arm of the machine is usually capable of fitting various attachments to the end in order to accomplish specific jobs such as digging, breaking, or scooping.

Crawling: A coating defect consisting of a lack of adhesion to, or dewetting of, the substrate while the coating or ink is wet. The cause is due to a difference in surface tension of the coating and substrate. Crawling is also known as cissing and dewetting.

Crazing (Worming): A defect found in pack hardened tools, manifested in surface markings.

Crc, cyclic redundancy check.: An error detection scheme in which the block check character is the remainder after dividing all the serialized bits in a transmission block by a predetermined binary number - or polynomial based on the transmitted data.

Credit allocation: Part of the fixed parameter field in the TPDU; the number of data units that can be sent before the sender must wait for an acknowledgment.

Creep Limit: The maximum stress that will result in creep at a rate lower than an assigned rate.

Creep Strength: (1) The constant nominal stress that will cause a specified quantity of creep in a given time at constant temperature. (2) The constant nominal stress that will cause a specified creep react at constant temperature.

Creepage Distance: The shortest distance between two conductors as measured along the device that separates them. Creepage Distance is normally a design parameter of insulators or insulating bushings.

creepage distance: Shortest path along the surface of insulating material between two conductive parts.

Creepage Distance: The shortage distance along the surface of a solid insulated material between two conductive parts.

Crest: The maximum value of a wave form. This is normally associated with electrical fault

magnitude or transients.

crest factor: The ratio of the peak or maximum value of a wave, to the r.m.s. value.

Crest Factor: The ratio of the peak or maximum value of a wave, to the r.m.s. value. The crest factor of a sine is the square root of 2.

Crest Value: See Crest Value.

Crevice Erosion: A type of concentration cell corrosion; corrosion of a metal that is caused by the concentration of dissolved salts, metal ions, oxygen, or other gases, and such, in crevices or pockets remote from the principal fluid stream, with a resultant building up of differential cells that ultimately cause deep pitting.

Crib: Network of cast iron used to support the cope when no cope flask is used.

Crimp Termination: A wire termination that is applied by physical pressure of terminal to wire.

Crimped Edge A Damaged: A damaged edge due to the strip wandering side to side into obstructions as it moves down the line.

Crimper: Tool used to secure a metal clip on the steel band.

Cristobalite: Simplest crystallographic form of SiO₂.

Criteria pollutant: A pollutant determined to be hazardous to human health and regulated under EPA's National Ambient Air Quality Standards. The 1970 amendments to the Clean Air Act require EPA to describe the health and welfare impacts of a pollutant as the "criteria" for inclusion in the regulatory regime.

Critical (Temperature)Range: Temperatures at which changes in the phase of a metal take place. Changes are determined by absorption of heat when the metal is heated and liberation of heat when it is cooled.

Critical angle: In refraction the value of the angle of incidence that produces a 90-degree angle of refraction.

Critical Cooling Rate: The minimum rate of continuous cooling just sufficient to prevent undesired transformations. For steel, the slowest rate at which it can be cooled from above the upper critical temperature to prevent the decomposition of austenite at any temperature above the Ms.

critical damping: Critical damping of a measuring instrument causes the equilibrium deflection to be reached in the shortest possible time, with the oscillations of the needle being quickly damped out. [Note Under damped instruments have their needles oscillating for some time, while over damped instruments take a long time to reach the final equilibrium deflection]

critical mass: The minimum amount of fissile material required in a nuclear reactor to sustain a chain reaction.

Critical mass: The smallest mass of fissile material that will support a self-sustaining chain reaction under specified conditions.

Critical Point: Temperatures at which internal changes or transformations take place within a metal either on a rising or falling temperature.

Critical Range: A temperature range in which an internal change takes place within a metal. Also termed transformation range.

Critical Shear Stress: The shear stress required to cause slip in a single crystal, in a designated slip direction on a given slip plane. Referred to as the critical resolved shear stress

if the shear stress reaches a threshold level.

Critical Strain: A term used in stress corrosion cracking tests to indicate the maximum strain rate necessary to promote stress corrosion cracks.

Criticality: Condition of being able to sustain a nuclear chain reaction.

Crl distribution point. : A directory entry or other distribution source for crls; a crl distributed through a crl distribution point may contain revocation entries for only a subset of the full set of certificates issued by on ca or may contain revocation entries for multiple cas.

CRO: [see cathode ray oscilloscope]

Cronak Process: A method of producing a film of chromium salts on since surfaces to inhibit corrosion.

Crop: The defective ends of a rolled or forged product which are cut off and discarded.

Crop residue: Organic residue remaining after the harvesting and processing of a crop.

Cropping: Cutting off ends of billets ingots or slabs containing pipe or other defects.

Cross Breaks: 1) Creases which appear as parallel lines transverse to the direction of rolling. 2) Quality defect on the edge of plate coming to the line (broken steel but not open breaks). 3) Hard spots caused by abrupt deformation of the strip after hot rolling and due to stressing beyond the elastic limit of the metal.

Cross Direction (In Rolled Or Drawn Metal): The direction parallel to the axes of the rolls during rolling. The direction at right angles to the direction of rolling or drawing.

Cross Feed: The feed that operates across the axis of the workpiece or at right angles to the main or principal feed on a machine.

Cross Gate: See Runner

Cross Head: See 'Pressure Roll.'

Cross modulation. : The modulation of the carrier of the desired signal by an undesired signal.

Cross point: The junction of an input and an output on a crossbar switch.

Cross Rolling: Rolling at an angle to the long dimension of the metal; usually done to increase width.

Cross Sectional Area: The area of the cut surface of an object cut at right angles to the length of the object.

Cross Talk: Electrical interference between two adjacent insulated conductors whereby a signal in one of the conductors will be picked up by the adjacent conductor.

Crossbar switch: A switch consisting of a lattice of horizontal and vertical paths. At the point intersection of each horizontal and vertical path, there is a cross point that can connect the input to the output.

Cross-bar switch. : (in pabx technology) in older pabxs, a switch having multiple vertical paths, multiple horizontal paths, and electromagnetically operated mechanical means for connecting any vertical path with any horizontal path. Modern pabxs often use an electronic version of the cross-bar switch.

cross-bonding: A method of connecting the sheaths of single core cables in a three phase system in order to reduce the circulating currents flowing in the sheaths.

Crossbow: A curvature across the width of the strip at a 90 degree angle to the direction in which the strip has been rolled or uncoiled.

Cross-Connect: System component where jumper wires and patch cards are used to

rearrange communications circuits in order to administer the network. Usually located in a telecommunications closet or equipment room.

Cross-Linked: Inter molecular bonds produced between long chain molecules in a material to increase molecular size by chemical or electron bombardment means, resulting in a change in physical properties in the material - usually improved properties.

Cross-Linked Polyethylene (XLPE): A Common thermoset insulation material for building wire and cable. It undergoes a cross linking chemical reaction during a curing process that causes the compound molecules to bond, forming heavier molecules.

Crossover range (point). See burn-through range.:

cross-subsidization : The transfer of assets or services from the regulated portion of an electric utility to its unregulated affiliates to produce an unfair competitive advantage. Cross-subsidy can refer to one rate class (such as industrial consumers) subsidizing the rates of another class (such as residential consumers).

Crosstalk: Unwanted signal on one channel due to interference from another channel.

Crosstalk: The noise on a line caused by signals traveling along another line.

Crosstalk: Any phenomenon by which a signal transmitted on one circuit or channel of a transmission system creates an undesired effect in another circuit or channel

crosstalk. :

Crowbar Circuit: the electrical circuit used to prevent an overvoltage condition of a power supply unit from damaging the circuits attached to the power supply.

Crown: Furnace roof, especially when dome shaped; highest point of an arch.

Crown Or Heavy Center: Increased thickness in the center of metal sheet or strip as compared with thickness at the edge.

CRT: [see cathode ray tube]

Crt, cathode-ray tube. : A television-like picture tube used in terminals; crt is commonly used as a synonym for crt terminal.

Crucible Furnace: A furnace fired with coke, oil, gas, or electricity in which metals are melted in a refractory crucible.

Crucible Steel: High carbon steel produced by melting blister steel in a covered crucible. Crucible steel was developed by Benjamin Huntsman in about 1750 and remained in use until the late 1940's.

Crucible Zone: The zone in the cupola between the bottom and the tuyere.

Crude oil: A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include 1. Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casing head) gas in lease separators and are subsequently comingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included; 2. Small amounts of nonhydrocarbons produced with the oil, such as sulfur and various metals; 3. Drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale.

Crude oil acquisitions (unfinished oil acquisitions): The volume of crude oil either

Crude oil f.o.b. price: The crude oil price actually charged at the oil producing country's port of loading. Includes deductions for any rebates and discounts or additions of premiums, where applicable. It is the actual price paid with no adjustment for credit terms.

Crude oil input: The total crude oil put into processing units at refineries.

Crude oil landed cost: The price of crude oil at the port of discharge, including charges associated with purchasing, transporting, and insuring a cargo from the purchase point to the port of discharge. The cost does not include charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage).

Crude oil less lease condensate: A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Such hydrocarbons as lease condensate and natural gasoline recovered as liquids from natural gas wells in lease or field separation facilities and later mixed into the crude stream are excluded. Depending upon the characteristics of the crude stream, crude oil may also include 1. Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casinghead) gas in lease separators and are subsequently comingled with the crude stream without being separately measured; 2. Small amounts of on hydrocarbons produced with the oil, such as sulfur and various metals.

Crude oil losses: Represents the volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc., as opposed to refining processing losses.

Crude oil production: The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water (BSw).

Crude oil qualities: Refers to two properties of crude oil, the sulfur content, and API gravity, which affect processing complexity and product characteristics.

Crude oil refinery input: The total crude oil put into processing units at refineries.

Crude oil stocks: Stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude oil stream: Crude oil produced in a particular field or a collection of crude oils with similar qualities from fields in close proximity, which the petroleum industry usually describes with a specific name, such as West Texas Intermediate or Saudi Light. Crude oil that has not been added by a refiner to inventory and that is thereafter sold or otherwise disposed of without processing for the account of that refiner shall be deducted from its crude oil purchases at the time when the related cost is deducted from refinery inventory in accordance with accounting procedures generally applied by the refiner concerned. Crude oil processed by the respondent for the account of another is not a crude oil acquisition.

Crude oil used directly: Crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Crude oil, refinery receipts: Receipts of domestic and foreign crude oil at a refinery. Includes all crude oil in transit except crude oil in transit by pipeline. Foreign crude oil is reported as a receipt only after entry through customs. Crude oil of foreign origin held in

bonded storage is excluded.

Crush: Buckling or breaking of a section of mold due to incorrect register when closing. Also, an indentation in the casting surface due to displacement of sand in the mold when the mold is closed.

Crush Strip Or Bead: An indentation in the parting line of a pattern plate which ensures that cope and drag have good contact by producing a ridge of sand which crushes against the other surface of the mold or core.

Cryogenic: Pertaining to very low temperature. Aluminum gains strength as temperature is reduced, making it an appropriate material for cryogenic applications

Cryptanalysis: Cryptanalysis refers to the study of ciphers, cipher text, or cryptosystems .it is the study of analyzing information system to get hidden or unknown aspects of the system.

Crypto operating instructions.: Instructions prescribing the methods to be employed in the operation of a cryptosystem. This includes a description of the cryptosystem, as well as the method of application of specific keys.

Cryptocentre. : An establishment maintained for the encryption and decryption of messages.

Cryptogram. : An encrypted communication in visible writing.

Cryptographic system, high grade. : A system designed to provide lasting security, i.e. Inherently resisting solution for a comparatively long period (or indefinitely).

Cryptographic system. Low grade. : A system designed to provide temporary security.

Cryptography. : The art or science which treats the various means and methods for rendering plain text unintelligible and reconverting cipher text into intelligible form or the application thereof by means other than cryptanalysis.

Cryptonet. : An organisation of stations capable of direct communications on a common cryptochannel.

Cryptosec. : The application of security measures, including the application of physical security measures to the cryptographic equipment and associated key material, in order to protect against the exploitation of information during transmission. (nato)

Cryptosecurity. : That component of communication security which results from the provision of technically sound cryptosystems and their proper use.

Cryptosystem. : The associated term of cryptomaterial which are used as a unit and which provide a single means of encryption and decryption.

Crystal: A natural or synthetic crystalline material having piezoelectric properties. As a transducer, used to convert dynamic pressures (vibrations) to ac electricity or change ac electricity into vibrations.

Crystal (xtal) (1). : A slice of mineral (such as quartz or tourmaline) which exhibits piezoelectric characteristics. It has the property of responding markedly to a given frequency when cut to a given thickness.

Crystal (xtal) (2).: A detector using the asymmetrical conducting properties of certain crystal-crystal or crystal-metal contacts.

Crystal Analysis: Determination of crystal structure.

crystal control. : Control of the frequency or an oscillator by means of a piezo-electric crystal.

Crystal Lattice: The way atoms are arranged in a crystal. Spacewise, there are only 14 different lattices.

Crystalline: Composed of crystals.

Crystalline Fracture: A fracture of a polycrystalline metal characterized by a grainy appearance. Compare fibrous fracture.

Crystalline fully refined wax: A light colored paraffin wax having the following characteristics

Crystalline other wax: A paraffin wax having the following characteristics

Crystallization : The formation of crystals by the atoms assuming definite positions in a crystal lattice. This is what happens when a liquid metal solidifies. (Fatigue, the failure of metals under repeated stresses, is sometimes falsely attributed to crystallization.)

CSA: Canadian Standards Association. CSA is located at 178 Rexdale Blvd, Toronto, Ontario, Canada M9W 1R3.

CSA: Canadian Standards Association. Test products, provides certification and develops standards for many products.

Csc. : Communications system control. The part of an earth station containing the communications equipment controls, monitoring and supervisory consoles, and traffic patching and channelling equipment.

Csma, carrier sense multiple access. : (in lan technology) a contended access method in which stations listen before transmission, send a packet, and then free the line for other stations. With csma, although stations do not transmit until the medium is clear, collisions still occur; two alternative versions (csma/ca and csma/cd) attempt to reduce both the number of collisions and the severity of their impact.

Csma/ca, csma with collision detection. : (in lan technology) csma that also listens while transmitting to detect collisions. See also ethernet and ieee 802.3.

CSP: Completely SelfProtected transformer.

Css, command support system. : Replacement for pfss.

CST: Customer Subsurface Transformer.

Csu, channel service unit. : A digital dce unit for dds lines; interfaces with dsu on customer's premises.

CSV: Character (or Comma) Separated Values Format, format widely utilized for the exchange of data between different software, in which the data are separated by a known character usually a comma.

CT: See "Current Transformer".

Ct(2). : The new digital standard for cordless telephones being deployed in the uk. Ct2 is being offered as a public service as well as for use in the home.

CTC: See Competition Transition Charge.

Cts, clear-to-send.: An rs-232 modem interface control signal (sent from the modem to the dte on pin 5) which indicates that the attached dte may begin transmitting; issued in response to the dtes rts. Called ready-for-sending in ccitt v24.

Cu: Chemical symbol for Copper.

CU: Coefficient of Utilization

Cu: Copper

CU (Lighting): Coefficient of Utilization

Cu : The chemical symbol for copper.

Cube Centered: Metallography (concerning space lattices) Body centered cubic. Refers to

crystal structure.

Cube Tap: An adapter that converts one receptacle opening to multiple openings.

Cubic foot (cf), natural gas: The amount of natural gas contained at standard temperature and pressure (60 degrees Fahrenheit and 14.73 pounds standard per square inch) in a cube whose edges are one foot long.

Cug, closed user group. : (in public data networks) a selected collection of terminal users that do not accept calls from sources not in their group; also, often restricted from sending messages outside the group.

Cull wood: Wood logs, chips, or wood products that are burned.

Culm: Waste from Pennsylvania anthracite preparation plants, consisting of coarse rock fragments containing as much as 30 percent small sized coal; sometimes defined as including very fine coal particles called silt. Its heat value ranges from 8 to 17 million Btu per short ton.

Culm and silt: are waste materials from preparation plants. In the anthracite region, culm consists of coarse rock fragments containing as much as 30 percent small-sized coal. Silt is a mixture of very fine coal particles (approximately 40 percent) and rock dust that has settled out from waste water from the plants. The terms culm and silt are sometimes used interchangeably and are sometimes called refuse. Culm and silt have a heat value ranging from 8 to 17 million Btu per ton.

Cultivar: A horticulturally or agriculturally derived variety of a plant.

Culvert Pipe: Heavy gauge, galvanized steel that is spiral formed or riveted into corrugated pipe, which is used for highway drainage applications.

Cumulative depletion: The sum in tons of coal extracted and lost in mining as of a stated date for a specified area or a specified coal bed.

cumulo-nimbus cloud: Thunder cloud from which lightning strikes originate.

Cuno Filter: An in line filter that takes the dirt out of the oil on a turbine.

Cup Fracture: A type of fracture in a tensile test specimen which looks like a cup having the exterior portion extended with the interior slightly depressed.

Cure Time: Full polymerization is a function of time and temperature.

curie: Measure of the activity of a radioactive substance. It is defined in terms of the rate of decay of a quantity of a radioactive isotope.

Curing: The process by which synthetic materials form continuous films by various combinations of oxidation, solvent evaporation and heat of polymerization according to their basic resin structures.

Curing Time (No Bake): That period of time needed before a sand mass reaches maximum hardness.

Curly: Appears as a relatively uniform curvature or sweep along the length of coiled metal.

Current: The movement of free electrons in a material.

Current: The movement of electrons in a conductor measured in Amperes.

current: [see electric current]

Current: The flow of electric charge is known as the current.

Current: The movement of electrons through a conductor; measured in amperes, milliamperes and microamperes.

Current (electric): A flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes.

Current (I): The rate of flow of electrons through a conductor or component; measured in amperes. The symbol (I) stands for intensity of the electron flow.

Current assets: Cash and other assets that are expected to be turned into cash, sold, or exchanged within the normal operating cycle of the utility, usually one year. Current assets include cash, marketable securities, receivables, inventory, and current prepayments.

Current at maximum power (Imp): The current at which maximum power is available from a module. [UL 1703]

current balance: Instrument for the determination of an electric current in absolute electromagnetic units.

Current Carrying Capacity: The current a conductor of given size is capable of carrying safely without exceeding its own insulation and jacket temperature limitations.

current carrying capacity of a conductor: The maximum current which can be carried by a conductor under specified conditions without its steady state temperature exceeding a specified value. Current flowing from the enclosure, or parts thereof, accessible to the operator in normal use, through an external conductive connection other than the protective earth conductor to earth or to another part of the enclosure.

Current Consumption: Maximum amount of current required to properly operate the photoelectric sensor.

Current liabilities: A debt or other obligation that must be discharged within one year or the normal operating cycle of the utility by expending a current asset or the incurrence of another short-term obligation. Current liabilities include accounts payable, short-term notes payable, and accrued expenses payable such as taxes payable and salaries payable.

Current Limitation: A fuse operation relating to short circuits only. When a fuse operates in its current-limiting range, it will clear a short circuit in less than 1/2 cycle. Also, it will limit the instantaneous peak let through current to a value substantially less than that obtainable in the same circuit if that fuse were replaced with a solid conductor of equal impedance.

Current Limiting Fuse: A fuse designed to reduce damaging extremely high current.

Current Limiting Fuse: It is the over current protective device. Its current responsive element is melted by a current within the fuse's specified current limiting range, abruptly introduces a high resistance to reduce current magnitude and duration, resulting in subsequent current interruption. It may be an integral part of any system.

Current loop (1). : (single-current signalling, used in USA) method of interconnecting teletype terminals and transmitting signals that represent a mark by current on the line and a space by the absence of current.

current loop (2). : (double-current signalling, used everywhere else) a mark is represented by current in one direction and a space by current in the other direction.

Current Penetration: The depth a current of a given frequency will penetrate into the surface of a conductor carrying the current.

current rating: This is the maximum current, which the fuse will carry for an indefinite period without undue deterioration of the fuse element.

Current ratio: The ratio of current assets divided by current liabilities that shows the ability of a utility to pay its current obligations from its current assets. A measure of liquidity, the higher the ratio, the more assurance that current liabilities can be paid.

Current Ratio: The current ratio of a current transformer is the ratio of r.m.s. primary

current to r.m.s. secondary current, under specified conditions of load.

Current Sinking: NPN output - refers to a switching output device that allows current flow from the load, through the devices output and then to ground, when in the "on" state.

Current Sinking Sensor: A current sinking sensor "sinks" current from the load to the negative terminal (-) of the dc voltage supply.

current source: A source which essentially maintains the source current at a predefined value almost independent of the load conditions.

Current Sourcing: PNP output - refers to a switching output device that allows current flow from the devices output, through the load, and then to the ground, when in the "on" state. Considered safer than NPN outputs due to the way current flows when wired up.

Current Sourcing Sensor : A current sourcing sensor "sources" current from the positive terminal (+) of the dc voltage supply to the load.

Current Tap: An adapter consisting of a medium-base lampholder extension, with or without integral switch, having one or two receptacle openings.

Current Transducer: A transducer used for the measurement of A.C. current.

Current Transducer: A device that converts alternating or direct electrical current signals into analog instrumentation signals so that they can be used and readily interpreted by certain industrial control systems

Current Transformer: A transformer used to measure the amount of current flowing in a circuit by sending a lower representative current to a measuring device such as a meter.

current transformer: An instrument transformer specifically designed to give an accurate current ratio for measurement and/or control purposes. They are always connected in series with the circuit (like an ammeter) and hence should never be allowed to have their secondary to be on open circuit to avoid saturation

Current Transformer: The device used to measure the alternating current together with voltage.

Current Transformer: A transformer designed for series connection in its primary circuit with the ratio of transformation appearing as a ratio of currents.

Current Transformer Ratio: 1) The ratio of primary amps divided by secondary amps. 2) The current ratio provided by the windings of the CT. For example, a CT that is rated to carry 200 Amps in the primary and 5 Amps in the secondary, would have a CT ratio of 200 to 5 or 40:1.

Current Transformers: Current transformers can be used to supply information for measuring power flows and the electrical inputs for the operation of protective relays associated with the transmission and distribution circuits or for power transformers.

Current-Limiting Fuse: A fuse which will limit both the magnitude and duration of current flow under short circuit conditions.

Cursor (1). : A movable underline, rectangular-shaped block of light, or an alternating block of reversed video on the screen of a display device, usually indicating where the next character will be entered.

Cursor (2). : Part of an indicating instrument or display that may be moved to establish a reference line. Most common use is on rhi displays for height-finding purposes.

Cushion : A mechanical device fitted into a hydraulic cylinder that closes off the flow path of fluid to effect a smooth deceleration and stop of the cylinder at the end of the stroke.

Customer choice: The right of customers to purchase energy from a supplier other than their traditional supplier or from more than one seller in the retail market.

Customer Test Strip: A full width sample of steel used in performing testing procedures.

Customs district (coal): Customs districts, as defined by the Bureau of the Census, U.S. Department of Commerce, " Monthly Report EM 545, " are as follows

Customs import value (C.I.V.): The price for a one-time open market transaction for near-term delivery of a specific quantity of product at a specific location where the commodity is purchased LDQUO; on the spot RDQUO; at current market rates. See also spot market terms associated with specific energy types.

Cut Edge: The normal edge that results from the shearing, slitting or trimming of a mill edge.

Cut In Half: Split one (1) coil into two (2) coils (not necessarily 50% in each coil).

Cut Off Voltage: Battery Voltage reached at the termination of a discharge. Also Known as the End Point Voltage (EPV).

Cut Off Voltage: It is a limited decided to cut off the voltage from the battery. On this specified voltage battery is considered as fully discharged. It is provided in mostly electronic devices like phone and cameras

Cut Out: IMIS term meaning loss of prime weight of a coil or cutting out rips and cracks on the edges of a coil.

Cut Out The Center: The act of removing the center laps or ID of a coil with long handled sheers to remove defects. The Reelman is sometimes directed to perform this task.

Cut To Length: Process to uncoil sections of flat rolled steel and cut them into a desired length. Product that is cut to length is normally shipped flat stacked.

Cutoff : Cutoff is to pausing the current flow to any system. It is provided to prevent any damage to any system. So cutoff relays are installed in the circuit to break the power supply.

Cutoff (Lighting): Luminaire light distribution is classified as cutoff when the candlepower per 1000 lamp lumens does not numerically exceed 25 (2.5%) at an angle of 90 degrees above nadir (horizontal), and 100 (10%) at a vertical angle of 80 degrees above nadir. This app

Cutoff Angle (Lighting): With regard to an outdoor lighting luminaire, the angle between the vertical axis and the first line of sight at which the bare light source is not visible.

Cut-off grade (uranium): The lowest grade, in percent U3O8, of uranium ore at a minimum specified thickness that can be mined at a specified cost.

Cutoff Machine, Abrasive: A device using a thin abrasive wheel rotating at high speed to cut off gates and risers from castings, or in similar operations.

Cutoff, Full (Lighting): A luminary light distribution with zero candela at an angle of 90 degrees or above and not more than 10% of emitted light above 80 degrees.

Cutoff, Non (Lighting): A luminary light distribution where there is no Candela restriction at any angle.

Cutoff, Semi (Lighting): A luminary light distribution with 5% candela at an angle of 90 degrees or above and not more than 20% of emitted light above 80 degrees.

Cutout: See "Fused Cutout".

Cutout: cutout is to cut the power supply from a system

Cut-Through Resistance: The ability of a material to withstand mechanical pressure, usually a sharp edge or prescribed radius, without separation.

Cut-through switch: A switch that forwards a packet to an output buffer as soon as the destination address is received.

CV: Continuous Vulcanization – Rubber casing process.

CV-Continuous Vulcanization: Simultaneous extrusion and vulcanization of wire coating materials.

CWIP : Construction Work In Progress

CX: Two-conductor, #18 A.W.G., rubber-insulated, twisted Christmas tree cord, 300V.

CXT: Two-conductor, #18 A.W.G., plastic-insulated, twisted Christmas tree wire, 300V.

Cycle: The repetitive unit of a periodic signal.

Cycle: One complete wave of alternating voltage or current.

Cycle: The time period running from the startup of one reactor cycle to the startup of the following cycle.

Cycle: A sequence of discharge followed by a charge, or a charge followed by a discharge, of a battery under specific conditions.

Cycle: one complete set of positive and negative values of alternating quantity is called cycle.

Cycle: One complete wave of positive and negative values of an alternating current.

Cycle (Battery): In Alternating current, the change of the poles from negative to positive and back.

Cycle life: Number of discharge-charge cycles that a battery can tolerate under specified conditions before it fails to meet specified criteria as to performance (e.g., capacity decreases to 80-percent of the nominal capacity).

Cycle redundancy check (CRC): A highly accurate error-detection method based on interpreting a pattern of bits as a polynomial.

cycle : One complete set of values through which an alternating voltage or current passes successively.

Cycle. : One complete positive and once complete negative alternation of a current or high voltage.

Cycle/reactor history: A group of assemblies that have been irradiated in the same cycles in an individual reactor and are said to have the same cycle/reactor history.

Cycling: A rhythmic change of the factor under control.

Cycling (natural gas): The practice of producing natural gas for the extraction of natural gas liquids, returning the dry residue to the producing reservoir to maintain reservoir pressure and increase the ultimate recovery of natural gas liquids. The reinjected gas is produced for disposition after cycling operations are completed.

Cyclone (Centrifugal Collector): In air pollution control, a controlled descending vortex created to spiral objectionable gases and dust to the bottom of a collector core.

Cyclonic Scrubber: In air pollution control, radial liquid (usually water) sprays introduced into cyclones to facilitate collection of particles.

Cyclotron: A device for accelerating charged particles to high energies by means of an alternating electric field between electrodes placed in a constant magnetic field.

Czochralski process: A method of growing large size, high quality semiconductor crystal by slowly lifting a seed crystal from a molten bath of the material under careful cooling conditions.

D: Used as a suffix to indicate a twin wire with two insulated conductors laid parallel under an

outer, non-metallic covering.

D bit, delivery confirmation bit. : (in an x25 packet-switched network) used to request end-to-end acknowledgment.

DA Bolt: A Double Arming Bolt.

DA Bolt: Double Arming bolt.

Daa, data access arrangement. : Dce furnished or approved by a common carrier that permits privately-owned dce or dte to be attached to the common carriers network; all modems now built for the public telephone network have integral daas.

DAC: digital-to-analog converter

daily peak : The maximum amount of power or energy or service demanded in one day from a company or utility service.

Daisy Chain: A wiring system in which a ring is formed for wiring of different devices together in one loop.

Daisy Chain: A cabling method (topology) of connecting devices in series. Daisy chaining is no longer recommended.

Dalton's Law Of Partial Pressure: Dalton's law states that in a mixture of non-reacting gases, the total pressure exerted is equal to the sum of the partial pressures of the individual gases

Dam: A physical barrier constructed across a river or waterway to control the flow of or raise the level of water. The purpose of construction may be for flood control, irrigation needs, hydroelectric power production, and/or recreation usage.

Damper Roll: Damper is a Australian dish which was made by road traveller.

Damper Systems: A damper system is a set of mechanical devices used to regulate physical characteristics in a system. For example, in a heating, ventilation and air conditioning (HVAC) system, the damper system is used to regulate the flow rate of air through the ducting system. In a mechanical system, dampers may be installed to limit the amount of vibration on individual components and translating through the system.

Dampers: Damper is a Australian dish which was made by road traveller.

damping: Decrease in the amplitude of an oscillation or wave motion with time.

danger: Risk of injury to persons (and livestock where expected to be present) from (i) fire, electric shock and burns arising from the use of electrical energy, and (ii) mechanical movement of electrically controlled equipment, in. so far as such danger is intended to be prevented by electrical emergency switching or by electrical switching for mechanical maintenance, of non electrical parts of such equipment.

Dangling bonds: A chemical bond associated with an atom on the surface layer of a crystal. The bond does not join with another atom of the crystal, but extends in the direction of exterior of the surface.

Dark-on Operation: Output mode that will result in an output from a device when light from the emitter is not incident (being received) upon the receiver. The beam is being interrupted, thus creating an output.

Dashpot: Damper is a vibrator which is used to brake the road for renovation or other purpose

Dass. : Digital access signalling system (dass) is a signalling standard designed for use between pabxs and public exchanges in the uk.

Data Acquisition (DAQ): The activity of measuring, transmitting, and recording electrical signals from sensors, switches, and transducers. Often implies the conversion of these signals into computer-compatible digital information.

Data Acquisition System: It convert analog waveforms into digital values for processing.

Data base. : A large, ordered collection of information.

Data Center Design: This is a networking technique where common data is stored at a one place that can access by any connected user,

Data channel (D channel): An ISDN channel primarily to carry control signals. It can also be used for low rate data transfer.

Data circuit terminating equipment (DCE): A device used as an interface between a DTE and a network.

data collection.: Procedure in which data from various sources is accumulated at one location (in a file or queue) before being processed.

Data communication : The interchange of information between two or more entities.

Data Communications Equipment (DTE): Generic telecommunications term referring to the equipment used to actually communicate messages among data terminal equipment (DTE).

Data communications. : The processes, equipment, and/or facilities used to transport signals from one data processing device at one location to another data processing device at another location.

Data compression: The reduction of the amount of data to be transmitted without significant loss of information.

Data confidentiality. : This service can be used to provide for protection of data from unauthorised disclosure. The authentication framework supports the data confidentiality service. It can be used to protect against data interception.

Data Converter: Data converter may be any software which converts the particular information in to different formats. It may be digital to analog etc.

Data Encryption Standard: See "DES".

Data Encryption Standard: The algorithm for the encryption of electronic data. This is an outdated symmetric-key method of data encryption. It was Developed by IBM in the early 1970s .

Data encryption standard (DES): The U.S. government standard encryption method for nonmilitary and no classified use.

Data integrity (1). : A measure of data communications performance, indicating a scarcity (or, ideally, the absence) of undetected errors.

Data integrity (2). : Protection against the unauthorised modification of data, whether by change, deletion or insertion.

Data integrity (3). : The property that data is being handled as intended and has not been exposed to accidental or intentional modification or destruction.

Data link (1). : The means of connecting one location to another for the purpose of transmitting and receiving data.

Data link (2). : The assembly of parts of two data terminal equipments that are controlled by a link protocol, and the interconnecting data circuit.

Data link (3).: Telecommunication facility joining two data stations.

Data link connection identifier (DLCI): A number that identifies the virtual circuit in frame

relay.

Data link layer: The second layer in the OSI model. It is responsible for node-to-node delivery.

Data link layer.: Second layer in OSI model; takes data from the network layer and passes it on to the physical layer; responsible for transmission and reception of packets, datagram service, local addressing, and error detection (but not error correction).

Data Matrix : It's a two dimensional code like as bar code. It consist white and black box.

Data network. : An arrangement of data circuits and switching facilities for establishing connections between data terminal equipments. Synonymous with data transmission network.

Data pabx, data-only pabx. : A pabx used solely for data; a device whose main purpose is to furnish connectivity - to set up and break connections on demand - between computers, terminals, and peripherals.

data processing equipment: Electrically operated machine units which, separately or assembled in systems, accumulate, process and store data. Acceptance and divulgence of data may or may not be by electronic means.

Data processing equipment, automatic (adpe). : Data processors, associated input/output devices, and auxiliary equipment using electronic circuitry to perform arithmetical and logical operations automatically by means of internally-stored programme instructions.

data processing network. : An organisation, geographically disseminated, of data processing systems interconnected to exchange data, and comprising the components of the interconnected data systems and their interface with the supporting data or communication network. Note: a data processing network can use the services of one or several communication networks; several data processing networks can use the services of one common communication network. A data processing network is called 'local' if it links several computers together in the same site. Synonymous with computer network, automatic data processing network. Contrast with data (transmission) network.

Data processing system. : Functional unit for data processing and storage. Note: data processing comprises the execution of mathematical, converting, transferring and storing operations.

Data processing, automatic (adp) (1). : Strictly speaking, the handling of data by means of the information technique.

Data processing, automatic (adp) (2). : Generally speaking (besides the definition above), all operations concerning collection/input, storage and output of data. Note: handling comprises merging, sorting, computing assembling and compiling of data.

Data rate, data signalling rate. : A measure of how quickly data is transmitted, expressed in bps. Also commonly, but often incorrectly expressed in baud. Synonymous with speed.

Data set. : A synonym for modem (coined by at&t).

Data signalling rate. : In data communication, the data transmission capacity of a single channel or of a set of parallel channels. The data signalling rate is expressed in bits per second.

Data stream. : The collection of characters and data bits transmitted through a channel.

Data Terminal Equipment (DTE): Generic telecommunications term referring to a computer-based device that needs to communicate, also referred to as a generator or receiver. See also Data communications equipment.

Data terminal equipment (DTE): A device that is an information source or an information sink. It is connected to a network through a DCE.

Data transfer: The movement of data from one location to another.

Data transmission network. : See data network.

Data transmission. : The movement of data in real time by electronic means without human intervention.

data : Information in numeric, alphanumeric, or other form.

Data. : Representation of facts, concepts, or instructions in a formalised manner suitable for communications, interpretation, or processing by humans by automatic means. Any representations such as characters or analog quantities to which meaning is, or might be, assigned.

Datagram: In packet switching an independent data unit.

Datagram approach to packet switching: A data transmission method in which each data unit is independent of others.

Datagram. : (in packet-switched networks) an abbreviated, connectionless, single-packet message from one station to another; rarely, if ever, implemented on current pdns; see minicall.

Data-over-voice. : An fdm technique which combines data and voice on the same line by assigning a portion of the unused bandwidth to the data; usually implemented on the twisted pair cables used for in-house telephone system wiring.

Dataset. : See local dataset.

date-time group (dtg). : A group of six digits with a zone time suffix and the standardised abbreviation for the month. The first pair of digits represent the day, the second pair the hour and the third pair the minutes. The last two digits of the year may be added after the month. Example: 090559z jul 14.

Datum Plane: Plane is like a wall or drawing sheet where all the curves are drawn. If the curves are in 2D so we can say the curves are in one plane.

Datum Points: From where all the dimension in the direction of XYZ coordinate is set called datum point*

Daubing: To cover the surface by some material to protect it

Day ahead market: The forward market for the supply of electrical power at least 24 hours before delivery.

Day-ahead and hour-ahead markets: Forward markets where electricity quantities and market clearing prices are calculated individually for each hour of the day on the basis of participant bids for energy sales and purchases.

Day-ahead schedule: A schedule prepared by a scheduling coordinator or the independent system operator before the beginning of a trading day. This schedule indicates the levels of generation and demand scheduled for each settlement period that trading day.

Daylighting controls: A system of sensors that assesses the amount of daylight and controls lighting or shading devices to maintain a specified lighting level. The sensors are sometimes referred to as "photocells."

Db: It's a logarithm unit of measurement in electronics industry

dB: See "decibel".

DB (Decibel): The standard unit of measure of signal gain or loss, used in attenuation and

crosstalk measurements.

Db, decibel. : Comparative (logarithmic) measure of signal power (strength or level): +10db (or +1 bel) represents a gain of 10:1; -3db represents a 50% loss of power. Contrast with dbm.

DB-15: An X.21 implementation specifying a 15-pin connector.

DB-25: An EIA-232 implementation specifying a 25-pin connector.

DB-37: An EIA-449 implementation specifying a 37-pin connector.

DB-9: An EIA-232 implementation or an EIA-449 IMPLEMENTATION, EACH SPECIFYING A 9-PIN CONNECTOR.

dBi: Decibels compared to an isotropic antenna. The higher the dBi, the stronger the antenna.

dBm: Decibels compared to one milliwatt. The higher the dBm, the higher the devices transmit or receive power.

Dbm. : Absolute measure of signal power where 0dbm is equal to one milliwatt. Contrast with db.

DBWP: Double braided weatherproof cable.

DC: Direct Current

DC: See "Direct Current".

dc: [see direct current]

DC: Direct current.

Dc Casting: A continuous method of making ingots or billets for sheet or extrusion by pouring the metal into a short mold. The base of the mold is a platform that is gradually lowered while the metal solidifies, the frozen shell of metal acting as a retainer for the liquid metal below the wall of the mold. The ingot is usually cooled by the impingement of water directly on the mold or on the walls of the solid metal as it is lowered. The length of the ingot is limited by the depth to which the platform can be lowered; therefore, it is often called semicontinuous casting.

Dc Actuator: It's a electromagnetic device which is driven by motor to control the motion of machines or system

Dc Circuit Breakers: Circuit breaker is used to cut the flowing current and not complete the circuit.

DC component: See direct current.

Dc Contactors: Contactor is used to connect the electric circuit. It completes the circuit of electricity.

Dc Drive: The motor which is driven by a DC motor is called as DC drive.

Dc Gearmotors: In a direct current (AC) gearmotor, the DC drive current creates a magnetic field which turns a shaft connected to a series of gears. The gears are designed with a gear ratio that greatly increases the motor torque while reducing the motor's output speed, therefore drawing a lower current to function.

Dc Micromotor: A micromotor is a special class of low power motor, typically fitting within a frame that is 35 mm square. A micromotor may also be called a fractional horsepower motor and is usually rated at or below 746 watts. Micromotors are typically run off of DC power supplies and are often used in actuator or control applications as servomotors or stepper motors.

Dc Motors: This motor has two-pole armature and permanent magnet having the south and north pole.

Dc Oil Coolers: Oil cooler is used to cool the lubricant or engine oil.

Dc Overload Relays: When the load is increase to uncontrolled position than overload relays breaker the circuit.

dc potentiometer: A potentiometer in which the supply is a battery and the balance is under d.c. conditions.

Dc To Ac Power Inverters: When an AC power supply is needed from a DC source so DC to Ac inverter is used as current converter.

dc to DC converter: Electronic circuit to convert DC voltages (e.g., Photovoltaic module voltage) into other levels (e.g., load voltage). Can be part of a maximum power point tracker (MPPT).

Dc To Dc Power Supply: These inverters are used to control the supply from a DC source to Dc needed source

Dcd, data carrier detect. : See cd.

DC-DC Controller: The device or the circuit which control the whole action of converting the current

DC-DC Converter : The electronic circuit used to convert the DC current in to Dc current. It may be with purpose of step up or step down the output voltage. It is used to supply the power from battery storage to portable electronic devices like mobile phones. Example is Power Bank.

Dce, data communications equipment, or data circuit-terminating equipment. : In common usage, synonymous with modem; the equipment that provides the functions required to establish, maintain, and terminate a connection as well as the signal conversion required for communications between the dte and the telephone line or date circuit.

DCF77: A LF transmitter located at Mainflingen, Germany, broadcasting a time signal on a 77.5 kHz frequency.

DCR: Direct current resistance.

Ddcmp, digital data communications message protocol. : A communications protocol used in dec computer-to-computer communications.

Ddd, direct distance dialling. : A telephone service in north america which enables users to call their subscribers outside their local area without operator assistance. In the united Kingdom and some other countries, this service is known as std, (subscriber trunk dialling).

DDR Memory: Double data rate memory. Is a class of integrated circuit used in computers known as RAM also.

Dds, dataphone digital service. : A communications service offered in the form of leased lines by at&t that transmits data in digital rather than analogue form, eliminating the need for modems.

De facto standard: A standard that has not been approved by an organized body but has been adopted as a standard through widespread use.

De jure standard: A standard hat has been legislated by an officially recognized body.

DE multiplexer (DEMUX): A device that separates the multiplexed signals into its original components.

De Vent: To close the vent connection of a pressure control valve, permitting the valve to function at its adjusted pressure setting.

Dead Annealing: To heat the material to above to its critical temperature to increase the

ductility of the material.

Dead Band: When a process is in process at one time a free time will be there in which no action is there is little time is called as dead band

Dead Center: Dead center is called as exact center of any object. But if we talking about engine dead center than this is the nearest or forest position of piston from crankshaft. Its known as TDC or BDC

Dead End: Dead end is the last end or no exit have road

Dead Flat: The fureset form of flatness is called as Dead flat.

Dead Front: Generally refers to equipment that is connected without exposed conductor. Dead front equipment is normally connected with elbows.

Dead Front: it is the electrical device in which the front part is dead or insulated from voltage and it can be touched without receiving an electric shock.

Dead Smooth: The smoothness

Dead Soft Annealing: Heating metal to above the critical range and appropriately cooling to develop the greatest possible commercial softness or ductility.

Dead Soft Steel: To heat the material to above to its critical temperature to increase the ductility of the material.

Dead Soft Temper: Condition of maximum softness of material mostly find in wire, strip, or sheet metal in the annealed sated

Dead space. : The area or zone which is within the range of a radio transmitter, but in which a signal is not received.

Dead Steel: Fully killed steel, also applied to steel which fails to respond to heat treatment.

Dead Time: The time between the fault arc being extinguished and the circuit breaker contacts remating.

Dead Time: it is the time between the command and action. It is unactive time for any system.

Deadband: When a process is in process at one time a free time will be there in which no action is there is little time is called as dead band

Deadburned: Term applied to refractory materials obtained by calcimining at a temperature high enough to form a product inert to atmospheric moisture and carbon dioxide, and less apt to contract.

Deadburned Dolomite: Dolomite burned at high temperature with additions of an agent, such as oxide of iron.

Deadhead: (DH) Deadheading is to run a coil through a stand with the rolls open; no reduction in gauge.

Deadtime: When no output is given by a process or we can say idle time for that time for machine or system

Deadweight tons: The lifting capacity of a ship expressed in long tons (2,240 lbs.), including cargo, commodities, and crew.

Deaerating Heaters: Heaters are used to preheat the water for further heat treatment in boiler or chemical industry. DE aerating heater is used to preheat or remove dissolved gases from water.

Deaeration: The process of removal the oxygen or other gases from feeded water to boiler.

Deaerator: dearator are used to preheat the water for further heat treatment in boiler or chemical industry. DE aerating heater is used to preheat or remove dissolved gases from

water.

Dealer tank wagon (DTW) sales: Wholesale sales of gasoline priced on a delivered basis to a retail outlet.

Dealkalization: The process of removal the alkaline ion from water

Dealkalizer: The device or container used to remove the ion from water to soften the water

Dealloying: The process of removal of one element from some selective area or selective place of alloy or material by corrosion process

Deashing: The process in which inorganic salt is removed from water to make water ion free

Debit: A unit of data consisting of two bits.

Debouncing : the electronic device may be software or hardware which ensure the single signal at the time of opening and closing the contacts to stop bouncing

Deburr: deburr(chips) is unwanted scrap at the edge of the processing material mainly in turning and milling.

Deburring: deburr(chips) is removed by a deburring tool at time of proceed is called as deburring.

Deburris: Horizontal knife used to remove burrs after slitting.

Dec, digital equipment corporation. : A leading manufacturer of minicomputers and related hardware and software.

decade: A factor of 10.

Decalescence: The process of removal of heat from a heated metal without increase in heating temperature.

Decant: Process of transferring the liquid from one container to other container.

Decarbonation: The process of removal of a carbon from liquids to make carbon ion free fluid

Decarburization: The process of removal of a carbon from liquids to make carbon ion free fluid. This process is opposite to carburizing

Decatherm: Ten therms or 1,000,000 Btu.

Decay: Disintegration of atomic nuclei resulting in the emission of alpha or beta particles (usually with gamma radiation). Also the exponential decrease in radioactivity of a material as nuclear disintegrations take place and more stable nuclei are formed.

Deception jammer. : A specialised type of jammer used to induce false indications in the system or systems being jammed.

Deception repeater. : A device that receives a signal, amplifies, delays or otherwise manipulates and retransmits the signal for the purpose of deception.

Deception, meaconing. : See meaconing.

deci (d): Decimal sub-multiple prefix corresponding to one-tenth or 10⁻¹. This is not a preferred suffix.

decibel: A logarithmic mathematical ratio that indicates a device's electric or acoustic signal to that of another

decibel: In the case of sound, the intensity is often measured in decibel with reference to the lowest audible note of the same frequency.

decibel: One tenth of a bel. A unit which compares levels of power in logarithmic form. Two power levels p₁ and p₂ are said to differ by n decibels given by $n = 10 \log_{10} p_2/p_1$

decibel: it is the unit to express the ratio of two values of two physical quantities .

Decibel: Unit to express differences of power level. Example The decibel is 10 times the common logarithm of the power ratio. It is used to express power gain in amplifiers or power loss in passive circuits or cables.

Decibel (db): Unit for expressing a logarithmic measure of the ratio of two signal levels.

Decibel (dB): A measure of the relative strength of two signal points.

Decimal number system: A method of representing information using 10 symbols (0,1,2,3,4,5,6,7,8,9).

Decimal.: A digital system that has 10 states, 0 through 9.

Decnet.: Trademark for dec's communications network architecture that permits interconnection of dec computers using ddcmp.

decode (1). : To convert an encoded message into its equivalent plain language text (this does not include solution by cryptanalysis).

Decode (2). : That section of a code book in which the code groups are in alphabetical, numerical or other systematic order.

Decoding: Process of restoring an encoded message to its pre-encoded form.

Decommissioning: Retirement of a nuclear facility, including decontamination and/or dismantlement.

Decommissioning: Removal of a facility (e.g., reactor) from service, also the subsequent actions of safe storage, dismantling and making the site available for unrestricted use.

Decompression: The name used to describe the change in pressure in a hydraulic system from elevated pressure to a lower pressure. Normally the change in pressure is made in a controlled amount of time to cause an even release of energy in the system.

Deconcentrator: The device used to remove the dissolved material from feeding water

Decontamination: Removal of unwanted radioactive or hazardous contamination by a chemical or mechanical process.

Decoy. : In electronic warfare, a device used to simulate a genuine target.

Decrypt. : To convert cipher text into plain text by reversal of the encryption process (this does not include solution by cryptanalysis). The term "decrypt" covers the meaning of "decipher" and "decode".

Decryption: Recovery of the original message from the encrypted data.

Dedicated Circuit: A circuit established to provide control voltage and current to one load or one type of load, such as an electric range or a computer.

Dedicated circuit. : See circuit, dedicated.

Dedicated line. : Same as leased line.

Dedicated reserves: The volume of recoverable, salable gas reserves committed to, controlled by, or possessed by the reporting pipeline company and used for acts and services for which both the seller and the company have received certificate authorization from the Federal Energy Regulatory Commission (FERC). Reserves include both company-owned reserves (including owned gas in underground storage), reserves under contract from independent producers, and short-term and emergency supplies from the intrastate market. Gas volumes under contract from other interstate pipelines are not included as reserves, but may constitute part or all of a company's gas supply.

Dedicated security mode of operation. : A security mode of operation in which all individuals with access to the data processing system or network are cleared to the highest

classification level of information stored, processed, or transmitted within the data processing, and with a common need-to-know for all of the information stored, processed, or transmitted within the data processing system or network. (nato)

Dedicated vehicle: A vehicle that operates only on an alternative fuel, as when a vehicle is configured to operate on compressed natural gas. Note A vehicle powered by an electric motor is not to be treated as dedicated.

De-energized: Free from any electrical connection to a source of potential difference and from electrical charge. A circuit is not truly deenergized until protective grounds have been installed.

De-energized: Free from any electrical connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. Note The term is used only with reference to current-carrying parts, which are sometimes energized (alive).

De-energized: To discharge or to disconnect the any system from its energy source.

Deep discharge: Discharging a battery to 20-percent or less of its full charge.

Deep Discharge (Battery): Withdrawal of 50% or more of the rated capacity of a cell or battery.

Deep Drawing: This is also called as punching process. In the part is made by punching by punch to remove the specified piece from part

Deep Drawing Applications: Application in coin making, punching and blanking

Deep Etching: To make the texture on the material is called as etching, mainly car dashboard having the etching.

Deep Groove Ball Bearings: Ball is placed in between the to face of plate in ball bearings but if the groove is more deep from a normal than the bearing have the more smoothness than normal.

Deep Wall Plate: A wall plate that provides greater clearance for device mounting straps than standard wall plates.

Deepbed Filter: Filter is used having large removal particle having fluid. These filter is used in the bottom

Deepest total depth: The deepest total depth of a given well is the distance from a surface reference point (usually the Kelly bushing) to the point of deepest penetration measured along the well bore. If a well is drilled from a platform or barge over water, the depth of the water is included in the total length of the well bore.

Defect: The unwanted, unexpected and due to lack in process defect can occur.

Defensive information operations (dio). : Processes, synergised with wider activities and plans, designed to ensure effective decision-making by protecting friendly information, information processes and cis from deliberate attack, and from accidental and naturally occurring events. The dio process integrates and coordinates policies and procedures, operations, personnel and technology to protect information and to defend cis. Dio are conducted through ia, physical security, operations security, counter deception, counter psychological operations, counter intelligence, electronic protection and special information operations.

Deferred cost: An expenditure not recognized as a cost of operation of the period in which incurred, but carried forward to be written off in future periods.

Deferred fuel costs: An expenditure for fuel that is not recognized for bookkeeping practices

as a cost in the operating period incurred, but carried forward to be written off in future periods.

Deferred income tax (liability): A liability in the balance sheet representing the additional Federal income taxes that would have been due if a utility had not been allowed to compute tax expenses differently for income tax reporting purposes than for ratemaking purposes.

defibrillation: The use of electric shock to stop abnormally fast heart rhythms. Electrical current is used to restore the heart's natural pacemaker function which resumes a normal heartbeat. The shock is administered through electrodes placed on the chest wall (external defibrillation) or in the heart (internal defibrillation).

defibrillator: The machine or device that produces the electric shock current for defibrillation

Deflagration: Propagation of a combustion zone through a fuel-oxidizer mixture at a rate that is less than the speed of sound in the un-reacted medium and capable of producing a significant increase in pressure.

deflection: Movement of an indicating needle.

Deflector Roll: Roll is used to change or divert the direction of belt on belt drive system

Deflocculant: It's a chemical additive used to reduce the viscosity of material

Deforestation: The net removal of trees from forested land.

Deformation Test: The test is done to check the overall or particular deformation in material due to environmental condition or chemical reactions

Deformative Bands: Bands in which deformation has been concentrated inhomogeneous

Defrost Cycle: The cycle is used to heating of cooling coils in fridge to remove the frost from them. Process is repeated after some time.

Defrost Timer: The timing is set for defrost cycle that how much time the cycle is repeated

Defrosting: The defrost cycle is used to heating of cooling coils in fridge to remove the frost from them. Process is repeated after some time.

Defrosting Control: To control the timing of defrosting the device is used called defroster as a sensor.

Defrosting Type Evaporator: The cycle is used to heating of cooling coils in fridge to remove the frost from them. Process is repeated after some time.

Degas Heat: A heat of degas steel is a heat that is produced to extremely low carbon levels through vacuum degassing.

Degasification system: The methods employed for removing methane from a coal seam that could not otherwise be removed by standard ventilation fans and thus would pose a substantial hazard to coal miners. These systems may be used prior to mining or during mining activities.

Degasser: To prevent the making bubbles at the time of drilling degasser is used which remove the gas from drilling fluids.

Degassing: The process is used to remove the unwanted gases from the processing fluids.

Degassing Flux: Degassing flux is used in alloy process where hydrogen is removed from alloy.

Degenerate Structure: Usually refers to pearlite that does not have an ideally lamellar structure. The degree of degeneracy may vary from slight perturbations in the lamellar arrangement to structures that are not recognizably lamellar.

Degradable organic carbon: The portion of organic carbon present in such solid waste as paper, food waste, and yard waste that is susceptible to biochemical decomposition.

Degreasing: This is a overall circumstance where a particular modules/ion perform same function but in different condition for all perform different result.

Degree Day: it's a measuring day of heating and cooling.

Degree Day: See Heating Degree Days; Cooling Degree Days; Population-weighted Degree Days. $\text{Degrees API} = (141.5 / \text{sp.gr.60 deg.F}/60 \text{ deg.F}) - 131.5$

Degree Of Ramming: The intent of hardness in the mold while in molding process

Degree Rise: The amount of increase in temperature caused by the introduction of electricity into a unit.

Degrees Of Superheat: The amount in which superheated temperature's vapor increase the temperature of saturated vapor is called degree of saturation

Dehumidification: The device used to reduce the humidity in the air, generally used in house for dehumidification.

Dehumidifier: The device used to reduce the humidity in the air, its looks like a air cooler but placed inside the room for dehumidification

Dehumidifying: The process of removing the humidity from air.

Dehydration: The condition of human body when required water level in a human body is reduced

Deionization: The process of filters the water controlling the electric charge of ion.

De-ionization Time: The time required for dispersion of ionized air after a fault is cleared so that the arc will not restrike on reenergization.

De-ionization Time: After interruption of anode current time require to a gas tube to get its precondition.

Deionizer : It's a gas cylinder used to make water deionized.

deka (da): Decimal multiple prefix corresponding to ten or 10. This is not a preferred suffix.

delay angle or control angle: The control angle for rectification (also known as the ignition angle) is the angle by which firing is delayed beyond the natural take over for the next thyristor.

Delay Code: The code is used to express the screen

Delay Line: A cable made to provide very low velocity of propagation with long electrical delay for transmitted signals.

Delay Screen : It's a cathode ray tube having screen show the electron beam images for some time.

Delayed Coking: . A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Delayed coking: A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Delayed Relays: A relay, or switch, is used to open or close an electrical circuit. In a delayed relay, an additional components is used to create a time-lapse between the input signal to the relay and the actual opening or closing of the contactors.

Delegation path. : An ordered sequence of certificates which, together with authentication of a privilege asserter's identity can be processed to verify the authenticity of a privilege asserter's privilege.

Delegation. : Conveyance of privilege from one entity that holds such privilege, to another entity.

Deliverability: Represents the number of future years during which a pipeline company can meet its annual requirements for its presently certificated delivery capacity from presently committed sources of supply. The availability of gas from these sources of supply shall be governed by the physical capabilities of these sources to deliver gas by the terms of existing gas-purchase contracts, and by limitations imposed by State or Federal regulatory agencies.

Delivered (gas): The physical transfer of natural, synthetic, and/or supplemental gas from facilities operated by the responding company to facilities operated by others or to consumers.

Delivered cost: The cost of fuel, including the invoice price of fuel, transportation charges, taxes, commissions, insurance, and expenses associated with leased or owned equipment used to transport the fuel.

Delivered energy: The amount of energy delivered to the site (building); no adjustment is made for the fuels consumed to produce electricity or district sources. This is also referred to as net energy.

Deliveries (electric): Energy generated by one system and delivered to another system through one or more transmission lines.

Delivery: To hand over something that was ordered booked by user and provide by manufacturer called delivery

Delivery End: The address where product will deliver is called delivery end.

Delivery Traffic Indication Message: See "DTIM".

Delivery Traffic Indication Message: it is used to ensure that all stations are awake when multicast or broadcast traffic is sent.

Delta: A three phase connection where each phase is connected in series with the next, separated by a phase rotation of 120 degrees.

Delta Connection: The electrically connection system in the form of closed triangle for power, voltage and current.

delta connection: A method of connecting three elements of a three-phase electrical system in a closed triangle or delta, and with the three phases being taken from the corners of the triangle.

Delta Iron: Iron is divided as per temperature zone, which is higher, middle and lower temperature. Delta iron is in the higher temperature zone.

Delta-crl (dcrl):. A partial revocation list that only contains entries for certificates that have had their vocation status changed since the issuance of the referenced base crl.

Delta-Wye: Refers to a transformer that is connected Delta on the primary side and Wye on the secondary.

Delta-Wye: It is type three-phase electric power transformer design that employs delta-

connected windings on its primary and wye/star connected windings on its secondary.

demagnetisation: The process of removing the magnetic properties from a material.

Demand: See Energy demand.

demand: The rate at which electric energy is delivered to or by a system, part of a system, or a piece of equipment. It is expressed in kilowatts, kilovoltamperes or other suitable unit at a given instant or averaged over any designated period of time. The primary source of "Demand" is the power-consuming equipment of the customers.

Demand bid: A bid into the power exchange indicating a quantity of energy or an ancillary service that an eligible customer is willing to purchase and, if relevant, the maximum price that the customer is willing to pay.

Demand charge: That portion of the consumer's bill for electric service based on the consumer's maximum electric capacity usage and calculated based on the billing demand charges under the applicable rate schedule.

Demand charge credit: Compensation received by the buyer when the delivery terms of the contract cannot be met by the seller.

demand charge : The sum to be paid by a large electricity consumer for its peak usage level.

demand factor: The ratio of the maximum demand of a system, or part of a system, to the total connected load of a system or the part of the system under consideration.

Demand Factor: For an electrical system or feeder circuit, this is a ratio of the amount of connected load (in kva or amperes) that will be operating at the same time to the total amount of connected load on the circuit. An 80% demand factor, for instance, indicates that only 80% of the connected load on a circuit will ever be operating at the same time. Conductor capacity can be based on that amount of load.

Demand Factor: The ratio of the maximum demand of any system to the total connected load of the system, or of the part of the system under consideration.

Demand indicator: A measure of the number of energy-consuming units, or the amount of service or output, for which energy inputs are required.

Demand interval: The time period during which flow of electricity is measured (usually in 15-, 30-, or 60-minute increments.)

Demand response programs: Demand response programs are incentive-based programs that encourage electric power customers to temporarily reduce their demand for power at certain times in exchange for a reduction in their electricity bills. Some demand response programs allow electric power system operators to directly reduce load, while in others, customers retain control. Customer-controlled reductions in demand may involve actions such as curtailing load, operating onsite generation, or shifting electricity use to another time period. Demand response programs are one type of demand-side management, which also covers broad, less immediate programs such as the promotion of energy-efficient equipment in residential and commercial sectors.

Demand-metered: Having a meter to measure peak demand (in addition to total consumption) during a billing period. Demand is not usually metered for other energy sources.

Demand-side management (DSM): A utility action that reduces or curtails end-use equipment or processes. DSM is often used in order to reduce customer load during peak demand and/or in times of supply constraint. DSM includes programs that are focused, deep, and immediate such as the brief curtailment of energy-intensive processes used by a utility's most demanding

industrial customers, and programs that are broad, shallow, and less immediate such as the promotion of energy-efficient equipment in residential and commercial sectors.

demand-side management (DSM): The planning, implementation, and monitoring of utility activities designed to influence customer use of electricity in ways that will produce desired changes in a utility's load shape. Utility programs falling under the umbrella of DSM include load management, customer generation, and innovative rates. These changes must produce benefits to both the utility and its customers.

Demand-side management costs: The costs incurred by the utility to achieve the capacity and energy savings from the Demand-Side Management Program. Costs incurred by customers or third parties are to be excluded. The costs are to be reported in thousands of dollars (nominal) in the year in which they are incurred, regardless of when the savings occur. The utility costs are all the annual expenses (labor, administrative, equipment, incentives, marketing, monitoring and evaluation, and other incurred by the utility for operation of the DSM Program), regardless of whether the costs are expensed or capitalized. Lump sum capital costs (typically accrued over several years prior to start up) are not to be reported. Program costs associated with strategic load growth activities are also to be excluded.

Demarcation Point: The interface which marks the division between telephone company facilities and private building wiring, where ownership and operational control changes.

Demineralization Train: Two units, a cation tank and an anion tank, working in conjugation. Water flows through the tanks and undergoes a positive and negative ion exchange that removes hardness.

Demineralized Water: City water which is circulated through a series of three demineralizing filters to soften it and remove residuals. It is then delivered to a storage tank for use in overflowing the superheater elements and headers on the boiler during hydrostatic tests. Filling the superheaters with demineralized water prevents the raw water used in a hydrostatic test from entering the superheaters where it could cause corrosion problems.

Demodulation: The process of retrieving data from a carrier; the reverse of modulation.

Demodulation: The process of separating the carrier signal from the information-bearing signal.

demodulation: The process of separating information from a modulated carrier wave.

Demodulator: A device that performs demodulation.

Demonstrated reserve base (coal): A collective term for the sum of coal in both measured and indicated resource categories of reliability, representing 100 percent of the in-place coal in those categories as of a certain date that meet specific minability criteria. Includes beds of bituminous coal and anthracite 28 or more inches thick and beds of subbituminous coal 60 or more inches thick that can occur at depths of up to 1,000 feet. Includes beds of lignite 60 or more inches thick that can be surface mined. Includes also thinner and/or deeper beds that presently are being mined or for which there is evidence that they could be mined commercially at a given time. Represents that portion of the identified coal resource from which reserves are calculated.

Demonstrated reserves: See Energy reserves.

Demonstrated resources: Same qualifications as identified resources, but include measured and indicated degrees of geologic assurance and excludes the inferred.

Demonstration and test vehicles: Vehicles operated by a motor vehicle dealer solely for the

purpose of promoting motor vehicle sales or permitting potential purchasers to drive the vehicle for pre-purchase or pre-lease evaluation; or a vehicle that is owned and operated by a motor vehicle manufacturer or motor vehicle component manufacturer, or owned or held by a university research department, independent testing laboratory, or other such evaluation facility, solely for the purpose of evaluating the performance of such vehicles for engineering, research and development, or quality control reasons.

demultiplexing. : The process of breaking a composite signal into its component channels; the reverse of multiplexing.

Demurrage: The charge paid to the vessel owner or operator for detention of a vessel at the port(s) beyond the time allowed, usually 72 hours, for loading and unloading.

Denaturant: Petroleum, typically pentanes plus or conventional motor gasoline, added to fuel ethanol to make it unfit for human consumption. Fuel ethanol is denatured, usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent denaturant. See Fuel Ethanol, and Fuel Ethanol Minus Denaturant.

Denatured : Fuel ethanol that is rendered unfit for human consumption by the addition of a petroleum denaturant, typically pentanes plus or conventional motor gasoline. Fuel ethanol is usually denatured prior to transport from the ethanol production facility, by adding 2- to 5-volume-percent denaturant.

Dendrite: A crystal that has a tree like branching pattern, being most evident in cast metals slowly cooled through the solidification range.

Dendrite: A slender threadlike spike of pure crystalline material, such as silicon.

Dendritic Segregation: Inhomogeneous distribution of alloying elements through the arms of dendrites.

Dendritic web technique: A method for making sheets of polycrystalline silicon in which silicon dendrites are slowly withdrawn from a melt of silicon whereupon a web of silicon forms between the dendrites and solidifies as it rises from the melt and cools.

Denial of service. : The prevention of authorised access to resources, or the delaying of timecritical operations. (nato)

Denier: A term describing the weight of a yarn (not cotton or spun rayon) which in turn determines its physical size. The weight in grams of 9000 meters of yarn.

Densitometer: Instrument utilizing the photoelectric principle to determine the degree of darkening of developed photographic film.

density: The mass of unit volume of a substance. [Unit kg/m³]. Dependable capacity is determined by such factors as capability, operating power factor and portion of the load the station is to supply.

Density Analyzers: A density analyzer is a measurement device used to determine the density of a material. There are many ways of determining the density of a material, with techniques varying based on whether the material of interest is solid, liquid, gaseous, or a packaged product where the density refers to the number of components per unit weight or volume.

Deoxidation: (1) Removal of oxygen from molten metals by use of suitable chemical agents. (2) Sometimes refers to removal of undesirable elements other than oxygen by the introduction of elements or compounds that readily react with them.

Deoxidizing: Removal of oxygen. In steel sheet, strip, and wire technology, the term refers to heat treatment in a reducing atmosphere, to lessen the amount of scale.

Dependable capacity: The load-carrying ability of a station or system under adverse conditions for a specified period of time.

dependable capacity : The system's ability to carry the electric power for the time interval and period specified.

Dependent Time Measuring Relay: A measuring relay for which times depend, in a specified manner, on the value of the characteristic quantity.

Dephosphorization: Elimination of phosphorus from molten steel.

Depleted resources: Resources that have been mined; include coal recovered, coal lost in mining, and coal reclassified as subeconomic because of mining.

Depleted storage field: A sub-surface natural geological reservoir, usually a depleted gas or oil field, used for storing natural gas.

Depleted uranium: Uranium having less than the natural 0.7% U-235. As a by-product of enrichment in the fuel cycle it generally has 0.25-0.30% U-235, the rest being U-238. Can be blended with highly-enriched uranium (e.g., from weapons) to make reactor fuel.

Depletion (coal): The subtraction of both tonnage produced and the tonnage lost to mining from identified resources to determine the remaining tonnage as of a certain time.

Depletion allowance: A term for either (1) a periodic assignment to expense of recorded amounts or (2) an allowable income tax deduction that is related to the exhaustion of mineral reserves. Depletion is included as one of the elements of amortization. When used in that manner, depletion refers only to book depletion.

Depletion factor: The multiplier applied to the tonnage produced to compute depletion. This multiplier takes into account both the tonnage recovered and the tonnage lost due to mining. The depletion factor is the reciprocal of the recovery factor in relation to a given quantity of production.

Depletion zone: Same as cell barrier. The term derives from the fact that this microscopically thin region is depleted of charge carriers (free electrons and holes).

Depreciation: See definition for Amortization.

Depreciation and amortization of property, plant, and equipment: The monthly provision for depreciation and amortization (applicable to utility property other than electric plant, electric plant in service, and equipment).

depreciation, straight-line : Straight-line depreciation takes the cost of the asset less the estimated salvage value and allocates the cost in equal amounts over the asset's estimated useful life.

Depth Card: A notched paper card used in setting the depth of the knives.

Depth of deepest production: The depth of the deepest production is the length of the well bore measured (in feet) from the surface reference point to the bottom of the open hole or the deepest perforation in the casing of a producing well.

Depth of Discharge: The portion of the nominal capacity from a cell or battery taken out during each discharge cycle, expressed in percent. Shallow Depth of Discharge is considered as 10% or less. Deep Discharge is considered 50% or more.

Depth of Discharge: This is the alternate method of indicating the state of charging the battery.

Depth Of Fusion: The depth to which base metal melts during welding

Derate: A decrease in the available capacity of an electric generating unit, commonly due to

Derating: Calculations that reduce standard tabulated ratings based, generally based on ambient temperature or proximity to a heat source.

Derating: Removing or reducing the power of rating of a device.

De-Rating: When two or more dimmers are ganged and heat sinking material is removed, it is important to "de-rate" or lower the wattage rating of the dimmer. This is due to the heat rise cause by the devices.

derating factor: A value that tells how much to reduce the power rating of a device for each degree above the reference temperature.

Derating Factor: A factor used to reduce a current carrying capacity of a wire when used in other environments from that for which the value was established.

Deregulation: The elimination of some or all regulations from a previously regulated industry or sector of an industry.

deregulation : The elimination of regulation from a previously regulated industry or sector of an industry.

derived units: Units of physical measurement, other than the fundamental units, but derived from these.

Dermatis: An inflammation of the skin, which may be caused by allergy to certain casting adjuncts, as resins; particularly in the shell process.

DES: Data Encryption Standard. DES is an encryption, method that uses an algorithm for private key encryption, in which the sender uses the same private key as the recipient uses to decode it.

DES: Data Encryption Standard

Descaling: The process of removing scale from the surface of steel. Scale forms most readily when the steel is hot by union oxygen with iron. Common methods of descaling are (1) crack the scale by use of roughened rolls and remove by a forceful water spray, (2) throw salt or wet sand or wet burlap on the steel just previous to its passage through the rolls.

Deseaming: A process of burning out defective areas on the surface of ingots, blooms or billets. The condition of the surface is such that it can then be rolled or forged into a satisfactory product.

Design Base Line: The noise spectrum which is the goal of any particular noise reduction program.

design current (of a circuit): The magnitude of the current (rms value for a.c.) to be carried by the circuit in normal service.

Design electrical rating (capacity) net: The nominal net electrical output of a nuclear unit, as specified by the utility for the purpose of plant design.

Design head: The achieved river, pondage, or reservoir surface height (forebay elevation) that provides the water level to produce the full flow at the gate of the turbine in order to attain the manufacturer's installed nameplate rating for generation capacity.

Design Load: The actual, expected load or loads that a device or structure will support in service.

Design Load: Design load is maximum load of any machine for which that is designed.

Design Test: Tests done to equipment to verify the design meets certain established characteristics or standards.

Design Test: To test the design of any product.

Design Voltage: Voltage for which cable is designed.

designated agent : An agent that acts on behalf of a transmission provider, consumer or transmission consumer as required under the tariff.

Designated employee (designated person): An employee (or person) who is designated by the employer to perform specific duties under the terms of this section and who is knowledgeable in the construction and operation of the equipment and the hazards involved.

Deslagger: A rotating retractable steam lance used to remove slag from the boiler tubes and walls.

Dispersion Hardening: Hardening by the formation of hard microconstituents dispersed in a softer matrix. See Precipitation Hardening

Dessicant: Water or moisture absorbant material used to prevent moisture from damaging packaged equipment or other merchandise.

Destination address (DA): The address of the receiver of the data unit.

Destination group. : Same as rotary.

Desulfurization: Operation that injects a chemical mixture into a ladle full of hot metal to remove sulfur prior to its charging into the Basic Oxygen Furnace. Sulfur enters the steel from the coke in the blast furnace smelting operation, and there is little the steelmaker can do to reduce its presence. Because excess sulfur in the steel impedes its welding and forming characteristics, the mill must add this step to the steelmaking process.

Desulfurization: The removal of sulfur, as from molten metals, petroleum oil, or flue gases.

Desulfurizer: A material used to remove sulfur from molten metals and alloys. Also, a form of holding ladle or basin in which the molten metal and desulfurizing material are brought into contact.

Desuperheater: Pressure reducing station which reduces 800 psi high pressure steam to 225 psi low pressure steam to supplement the low pressure system throughout the mill.

Detachment: The locating of a combustible particulate solid process in the open air or in a separate building.

Detect attack. : Ability to detect and identify threats, attacks or other degrading conditions. Detection may initiate both restoration and response processes and must include accurate threat assessments, indications and warnings (i&w) of potential attacks, an ability to disseminate warnings of adverse conditions, and timely current intelligence support in the event of an actual attack. This support will involve the ongoing monitoring of appropriate networks and systems to detect disruptions, intrusions and attacks.

Detectable Object: Refers to the requirements of an object; size, reflection qualities, light transmission properties, in order for that object to be detected by the photoelectric sensor.

Detection. : Detection is the component that looks for anomalous activity that might indicate intrusions, which are unauthorised personnel or, in the case of cis, unauthorised programs such as malicious code (e.g. Masquerade attempts, viruses, trojan horses, etc.) Attacking the system. Intrusions are a series of activities that attempt to compromise the confidentiality, integrity or availability of a resource. Detection can be performed through a variety of means, including surveillance activities, the use of intrusion detection systems and review of audit logs.

detector: An instrument to detect the unbalance in a bridge circuit.

Detroit Cup Test: A cupping test for sand, using a steel ball as plunger, the depth of cup

being shown on a dial

Deuterium: "Heavy hydrogen", a stable isotope having one proton and one neutron in the nucleus. It occurs in nature as 1 atom to 6500 atoms of normal hydrogen, (Hydrogen atoms contain one proton and no neutrons).

Developed Hardness: Hardness capability of a metal or alloy after a hardening heat treating process.

Development: The preparation of a specific mineral deposit for commercial production; this preparation includes construction of access to the deposit and of facilities to extract the minerals. The development process is sometimes further distinguished between a preproduction stage and a current stage, with the distinction being made on the basis of whether the development work is performed before or after production from the mineral deposit has commenced on a commercial scale. Developmental. Drilling to delineate the boundaries of a known mineral deposit to enhance the productive capacity of the producing mineral property.

Development costs: Costs incurred to obtain access to proved reserves and to provide facilities for extracting, treating, gathering, and storing the oil and gas. More specifically, development costs, depreciation and applicable operating costs of support equipment and facilities, and other costs of development activities, are costs incurred to

Development drilling: Drilling done to determine more precisely the size, grade, and configuration of an ore deposit subsequent to when the determination is made that the deposit can be commercially developed. Not included are

Development well: A well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive. Also see Well.

Deviation ratio. : In a frequency modulation system, the ratio of the maximum frequency deviation to the maximum modulating frequency of the system under specified conditions.

Device: A combination of individual components that are arranged to form a unit with a specific set of operating parameters.

device: A unit of an electrical system that is intended to carry but not utilize electric energy.

Device Control Point: Local keypad on device level to control the switchgear often combined with local or remote switch.

Device Net: Non-proprietary device-level networking protocol for industrial automation. Developed by Allen-Bradley based on Bosch's CAN chips, now the province of the non-profit Open Device Net Association (ODVA).

Dew Point: The dew point of the atmosphere inside the furnace. The higher the negative number, the dryer the furnace. A dry furnace is desired.

Dewatering Chemicals: A dewatering chemical is any chemical used to remove water or moisture from an environment. Dewatering chemicals are often used in conjunction with slurry and sludge treatment in wastewater treatment facilities. Dewatering chemicals are often used in other industries and are commonly used to facilitate drilling through mud in the petroleum drilling industry.

Dewatering Pumps: The term dewatering pump refers to any of a class of pumps used to remove water from an environment and is commonly used in applications in the construction and marine industries. Sump pumps and bilge pumps are both common types of dewatering pumps.

Dewaxing: The process of melting out the expendable wax pattern from an investment mold by the application of heat, usually at temperatures less than 250 B0F (121) B0C).

Dexidation: Removal of excess oxygen from molten metal, usually accomplished by adding materials with a high affinity for oxygen, the oxides of which are either gaseous or readily form slags.

Dextrin: Soluble gummy carbohydrate formed by the decomposition of starch by heat, acids, or enzymes; it is used in core compounds, mold compounds, mold washes, core pastes, and other compounds requiring high dry compressive strengths.

Dezincing: A coating defect consisting of the removal of the zinc oxide in a C enamel film by chemical reaction with food products. Dezincing appears as a lack of opacity in the film and usually occurs in a random pattern.

Dezurik Valve: Butterfly or slide plate type stop valve that allows emergency quencher and quencher flow to the bull nozzle of the ductwork. Name refers to manufacturer.

DFT: Discrete Fourier Transform

DHCP: Domain Host Control Protocol. DHCP is a protocol used for dynamically assigning IP addresses to networked computers.

Dia Tester (Wolpert Hardness Tester): A hardness testing machine using the Vickers or Brinell ball indenter.

diac: A silicon bilateral device used to gate other devices such as triacs.

Diagnostics. : Programs or procedures used to test a piece of equipment, a communications link or network, or any similar system.

Diagram: A formal drawing showing the arrangement of components or devices.

Dial network.: Synonymous with public telephone network.

Diallyl Phthalate (DAP): A thermosetting plastic that offers outstanding dimensional stability and resistance to most chemicals and chemical compounds. It is used in the production of connector housings.

Dialog: The exchange between two communicating devices.

Dial-up line, dial-in line, dial line. : A circuit or connection on the public telephone network.

Diametral Pitch: Ratio of the number of teeth on a gear to the number of inches of pitch diameter or the number of teeth to each inch of pitch diameter.

Diammonium Phosphate: Used to fireproof clothing of foundry workers.

Diamond Pyramid Hardness Test: This test, more commonly known as the vickers test finds greater use in the laboratory than the workshop. It employs a pyramid shaped diamond with an included angle of 136° which is impressed into the specimen using loads of 5 to 120 kg making a small square impression. This test is used for finished or polished components because the impression can be very small. The diamond pyramid hardness number is obtained from a calculation based on measuring the diagonals of the impressions in the steel.

Diaphragm Couplings: Couplings are mechanical fasteners, usually used to join two pieces of a shaft together for the purpose of driving rotating equipment. Many shaft coupling are designed for tight tolerances and require very accurate shaft alignment. A diaphragm coupling is a type of flexible coupling that makes use of a pair of flexible plates joined by a spacer to transfer torque from one plate to the other. The flexibility of the diaphragm plates allow for slight misalignments.

Diaphragm Pumps: A diaphragm pump, also known as a membrane pump, is a type of

positive displacement pump that uses a pulsating diaphragm to pump a fluid from a chamber through a discharge pump. All inlets and outlet pipes must be incorporated with non-return check valves to ensure the motion of the diaphragm results in pumping of the fluid.

Diaphragm pumps are characterized as having good suction lift capabilities, resulting in the ability to operate at low pressure with low flow and the ability to self-prime.

Diaphragm Shell Molding Machine: An arrangement for applying a squeeze pressure with a high temperature silicone rubber diaphragm.

Diaphragm Valves: A diaphragm valve, also known as a membrane valve, makes use of a diaphragm component to seal the valve inlet. The diaphragm can be controlled by any of a number of different types of actuators which are used to seal the diaphragm into the seat or saddle of the valve body.

Diaspore Clay: A rocklike mineral consisting chiefly of diaspore (HAlO_2) bonded by fire clay substance with an alumina content higher than 63%.

Diathermometer: An instrument for examining the thermal resistance or the heat conducting power of objects.

Diatomaceous Earth : A hydrous silica which is soft, light in weight and consists mainly of microscopic shells of diatoms or other marine organisms.

Dibit. : A group of 2 bits. In 4-phase phase modulation such as DPSK, each possible value of a dibit is encoded as a unique carrier phase shift; the 4 possible values of a dibit are 00, 01, 10 and 11.

Die: A metal block used in forming materials by casting, molding, stamping, threading, or extruding.

Die: A device used in the drawing of a wire; that element through which the wire is drawn, to achieve a predetermined diameter. A mold used to form a plastic compound around a wire or cable.

Die Assembly: The parts of a die stamp or press that hold the die and locate it for the punches.

Die Cavity: The impression in a die into which pattern material is forced.

Die Cleaning Area: A section of the coating of the strip which is produced when the Operator cleans the die.

Die Coating: See Release Agent

Die Insert: A removable liner or part of a die body or punch.

Die Lines: Longitudinal marking which may be imparted to the surface of an extrusion by irregularities in a die aperture

Die Set: In stamping, the parts of the press that hold the die and locate it in proper relation to the punches.

Die Shift: The impression of the top die not being in alignment with the impression of the bottom die, also, the amount of misalignment.

Die Sinking: Forming or machining a depressed pattern in a die.

Die Stock: The frame and two handles (bars) which hold the dies (chasers) used for cutting (chasing) external screw threads.

dielectric: Non-conductor of electricity. An insulator. Substance in which an electric field gives rise to no net flow of electric charge but only to a displacement of charge.

Dielectric: (1) Any insulating medium that intervenes between two conductors. (2) A material that, having the property required to establish an electric field, is recoverable in whole or in

part as electric energy.

Dielectric: The insulating material or a very poor conductor of electric current are known as Dielectric.

Dielectric: An insulating material usually having a very low loss factor (RF cables).

Dielectric Constant: A number that describes the dielectric strength of a material relative to a vacuum, which has a dielectric constant of one.

dielectric constant: Relative permittivity. It is the ratio of the capacitance of a capacitor with the given material as dielectric, to the capacitance of the same capacitor with vacuum (or air) as the dielectric.

Dielectric Constant: That property of a dielectric that determines the electrostatic energy stored per unit volume for a unit potential gradient. Permittivity is the preferred term.

Dielectric Constant: Measuring the ability of a substance to store electrical energy in an electric field.

Dielectric Constant: That property (K) of an insulating material which is the ratio of the parallel capacitance (C) of a given configuration of electrodes with the material as the dielectric, to the capacitance of the same electrode configuration with a vacuum as the dielectric.

Dielectric Grease: A silicone based chemical compound used to seal and lubricate connections between medium voltage connectors such as cable termination elbows.

Dielectric Grease: The non conductive grease used for electrical connectors to prevent from corrosion.

dielectric heating: A form of heating in which electrically insulating material is heated by being subjected to an alternating electric field. Results from energy being lost by the field to electrons within the atoms and molecules of the material.

dielectric loss: Loss occurring in the leakage resistance of the dielectric.

Dielectric Oven : A rapid drying high frequency electric oven used to bake cores.

Dielectric Phase Angle: Angular difference in phase between the sinusoidal alternating potential difference applied to a dielectric and the component of the resulting alternating current.

Dielectric Strength: The maximum voltage an insulation system can withstand before breakdown, expressed in volts per mil of insulation thickness.

dielectric strength: The ability of a dielectric material of specified thickness to withstand high voltages without breaking down.

Dielectric Strength: The maximum voltage that a dielectric material can withstand, under specified conditions, without rupturing. It is usually expressed as volts/unit thickness. Also called Disruptive Gradient or Electric Strength.

Dielectric Strength: the strength of Dielectric material to withstand the maximum electric field under ideal conditions.

Dielectric Strength: A term used to describe the limit, without damage of an insulating material, to an applied voltage potential.

Dielectric Test: A test that is used to verify an insulation system. A voltage is applied of a specific magnitude for a specific period of time.

Dielectric Withstand test: The test to check the effectiveness of the insulation of material.

Dielectric Withstand Voltage Test: The test to determine Dielectric Withstand.

Dielectric Withstand : The ability of insulating materials and spacing's to withstand specified overvoltage's for a specified time (one minute unless otherwise stated) without flashover or puncture.

Dielectric Withstanding Voltage: Maximum potential gradient that a dielectric material can withstand without failure.

Dielectric : A nonconductor of electricity. An insulator that is capable of concentrating electric fields.

Dielectric : 1) Any electrical insulating medium between two conductors. 2) The medium used to provide electrical isolation or separation.

Diesel fuel: A fuel composed of distillates obtained in petroleum refining operation or blends of such distillates with residual oil used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline.

Diesel fuel system: Diesel engines are internal combustion engines that burn diesel oil rather than gasoline. Injectors are used to spray droplets of diesel oil into the combustion chambers, at or near the top of the compression stroke. Ignition follows due to the very high temperature of the compressed intake air, or to the use of "glow plugs," which retain heat from previous ignitions (spark plugs are not used). Diesel engines are generally more fuel-efficient than gasoline engines but must be stronger and heavier because of high compression ratios.

Diesel Generator Sets: A diesel generator set is a power generation system commonly used in areas where wired electrical power is not available or where backup power is required. A diesel engine is used to drive a motor, which in turn drives an alternator in order to generate electricity. Additional equipment such as support bases, auxiliary structures, and devices for electrical control, power distribution and fault protection may also make up the overall diesel generator set.

diesel oil: The oil left after petrol and kerosene have been distilled from crude petroleum. Used as a fuel in diesel engines.

Diesel-electric plant: A generating station that uses diesel engines to drive its electric generators.

Dietert Process: A patented process for the production of precision molds involving blowing a contoured core around a pattern to form half a mold.

Dietert Tester: A patented apparatus for the direct reading of a Brinell hardness after impression without using magnification or conversion tables.

difference amplifier: A device that amplifies the difference between two inputs. It rejects any signals common to the two input.

Difference of potential: See electromotive force and voltage.

Differential (Hysteresis): The distance between the operating point where the target enters the sensing field (sensor energizes) to the release point where the target leaves the sensing field (sensor de-energizes).

Differential Coatings: Coatings on flat rolled products whereby the thickness of the coating on the one side is heavier than the other side. At Weirton Steel, the term is applied to a tin plate product which requires one side of the steel to have a heavier tin coating than the other side.

Differential Current: The algebraic summation of the current in the torque motor; measures in MA (milliamperes).

Differential Cylinder: Any cylinder in which the two opposed pistons are not equal.

Differential Heat Treatment: A heating process by which the temperature is varied within the object so that, after cooling, various parts may have different properties as desired.

Differential Input: Analog input consisting of the voltage difference between two terminals, both of which are different from computer ground.

Differential Manchester encoding: A digital-to-digital polar encoding method that features a transition at the middle of the bit interval as well as an inversion at the beginning of each 1 bit.

Differential modulation. : A type of modulation in which the absolute state of the carrier for the current signal element is dependent on the state after the previous signal element. See dpsk.

Differential phase shift keying (DPSK): A digital-to-analog encoding method in which the bit pattern defines the phase change instead of the current phase.

Differential Pressure: The value or magnitude of pressure measured as the absolute difference of the inlet pressure and outlet pressure.

Differential Pressure Gauges: A differential pressure gauge is a measurement device used to measure pressure at the gauge inlet relative to pressure at another location. The differential pressure can be measured relative to atmospheric pressure or relative to the pressure as measured at another location. For example, a differential pressure gauge may be used to record the pressure drop across a constriction in a flow meter for the purpose of determine the flow rate.

Differential Signaling: the information transmitting system using two complimentary signals.

Differential Travel: (Hystereis) The distinctive property of a photoelectric sensor that results in the operation point being different from the release point. This distance is expressed as a % of the total sensing distance of the photoelectric sensor. It is the distance difference between the operate point when approaching the photoelectric, and the release point when moving away from the photoelectric.

differentiator: An op amp whose output is proportional to the rate of change of the input signal.

Diffuse insulation: Sunlight received indirectly as a result of scattering due to clouds, fog, haze, dust, or other obstructions in the atmosphere. Opposite of direct insulation.

diffuse reflection: Diffusion by reflection in which, on the macroscopic scale, there is no regular reflection.

Diffuse Reflective: The detection method of a photoelectric sensor used when the photoelectric relies on the object being sensed to reflect the light beam back to the receiver. The emitter/receiver are contained in one unit.

diffuse transmission: Transmission in which, on the macroscopic scale, there is no regular transmission.

diffused lighting: Lighting in which the light on the working plane or on an object is not incident predominantly from a particular direction.

Diffusion furnace: Furnace used to make junctions in semiconductors by diffusing dopant atoms into the surface of the material.

Diffusion length: The mean distance a free electron or hole moves before recombining with another hole or electron.

Diffusive transport: The process by which particles of liquids or gases move from an area of higher concentration to an area of lower concentration.

Digital: A discontinuous or discrete entity.

Digital: Generally in electronics, refers to signals, devices, or circuits that are binary, meaning they only have two states (high or low, 1 or 0, on or off).The branch of electronics dealing with such signals and their circuits.

Digital data: Data represented by discrete values or conditions.

Digital data services (DDS): A digital version of an analog leased line with a rate of 64Kbps.

Digital Device: A device or component that responds to or produces a discrete function based on a change in state.

Digital Flow Meter:

Digital Input/output (DIO): Input or output points allowed only two discrete states, typically on or off,1 or 0.

Digital Level Indicator: Devices that electronically measures the level of oil in a tank. The readout is given in a percentage of the tank that is full (100%).

Digital loopback. : A diagnostic test that forms the loop at the modem's dte interface;

digital meter: Show a discrete reading, in the form of a decimal number, for a given input quantity.

Digital Multimeters: A multimeter is an electrical measurement device used to measure voltage, current, and resistance in an electrical circuit. Digital multimeters read the signal of the physical quantity being measured over either a preselected range, or within a range set by an autorange function. The analog signal read by the meter is passed through a series of electrical components to precondition the signal before putting it through an analog to digital converter. The output value is reported on an LCD or LED screen.

Digital network: A network that transmits digital signals.

Digital pipe: A high-speed path composed of time-multiplexed channels.

Digital service unit (DSU): A device that allows the connection of a user's device to a digital line.

Digital service unit/channel service unit (DSU/CSU): A device that allows multiple users of a single T line by dividing the capacity of the line into interleaved channels.

Digital signal: A discrete signal with a limited number of values.

Digital Signal Processing: A technique for the processing of digital signals by various filter algorithms to obtain some desired output.

Digital Signal Processing: The calculation to modify the information signals. It is used to cut and add the analog signals.

Digital Signal Processing (DSP): The manipulation of signal information while it exists in digital rather than analog form.

Digital Signal Processor: A microprocessor optimized in hardware design and software instruction set for the processing of analog signals digitally. This is achieved by DFT and similar techniques.

Digital Signal Processor: The microprocessor to modify the signals.

digital signal. : A signal that represents information by varying a quantity, such as amplitude or frequency, in two or more discrete steps. In the case of two discrete steps, the digital signal is called a binary signal.

Digital Signature: A method to authenticate the sender of a message.

Digital signature. : A non-forgable transformation of data that allows proof of source, non-repudiation, and verification of data integrity.

Digital Subscriber Line: See "DSL".

Digital Subscriber Line: The line used to transfer the digital data over telephone lines.

digital to analog converter or D/A converter or D to A converter: A device or circuit used to convert a digital signal to an analog signal across a pair of terminals.

Digital. : Discretely variable as opposed to continuously variable. Data characters are coded in discrete, separate pulses or signal levels. Contrast with analogue.

Digital-to-Analog Converter (D/A): Electronic device, often an integrated circuit that converts a digital number into a corresponding analog voltage or current.

Digital-to-analog converter (D/A): A circuit that converts a binary signal to an equivalent analog form.

Dike: A patented flexible seal to prevent blow by in core boxes.

Dilatometer: An instrument for measuring the expansion or contraction of a solid metal resulting from heating, cooling, polymorphic changes, etc.

Dimensional Allowance: The specified difference in size between mating parts

Dimensional Letters: Dimensional letters are alpha-numeric characters used in the production of signs and displays. Dimensional letters come in a wide range of sizes and materials, including magnetic sheeting, plastic, metal, foam, and other options. The choice of material will largely depend on the application surface, the method of adhesion, the environment the letters will be exposed to, and the length of time the letters are required to last.

Dimensional Tolerance Grades: A system of classifying the tightness of tolerances for the purpose of defining accurately the tolerances involved, and for simplifying the communication process between customer and producer regarding what is wanted, and what is possible, respectively.

dimensions of unit: The dimensions of a physical quantity are the powers to which the fundamental units expressing that quantity are raised.

Dimmer: A switch with electronic components that permits variable control of lighting intensity.

Dimming Ballast: A special ballast used with fluorescent dimmers to control the light intensity of fluorescent lamps.

Din Rail Enclosures: A DIN rail is a top-hat shaped rail, with specifications that meet German Industry Standards known as DIN standards. A DIN rail enclosure is a specialized box designed to install rail-mounted components for the assembly of electronic circuits and systems.

Din Rail Power Supply: A power supply designed for installation in electronic or mechanical devices on a DIN rail. A DIN rail is a top-hat shaped rail, with specifications that meet German Industry Standards known as DIN standards.

Dina jammer. : A type of barrage jammer using the principle of direct noise amplification. See also noise jamming.

Diode: A semiconductor device that only allows current to pass through it in one direction, cathode to anode. Also, a classification of semiconductor devices having only one junction. Examples include rectifier, zener, varactor, and tunnel diodes.

diode: Simplest and most fundamental non-linear circuit element. It is a two terminal device which only allows current to flow in one direction.

Diode Bridge: A diode is an electronic component with two ends, or terminals, that only allows current flow in one direction. Depending on their design, diodes can act as a regulator or check valve, rectifying and controlling the current in its forward direction to achieve a specific response. A diode bridge is a configuration of four or more diodes arranged such that regardless of the input polarity, the same output polarity will always be delivered by the bridge. Because of this ability, bridge diodes are often used to convert alternating current signals to direct current.

Diode-Pumped Laser Markers: A diode-pumped laser is a solid-state laser that uses a crystalline or glass element as the gain medium of the laser to amplify the energy. Diode-pump lasers are capable of delivery very high power levels in compact and efficient delivery mechanisms. When used in laser marking systems, diode-pumped lasers are capable of producing deep engravings and markings in higher strength materials.

Dip Coat: In solid and shell mold investment casting, a fine ceramic coating applied as a slurry to the pattern to produce maximum surface smoothness, followed by a cheaper conventional investment. See Investment Precoat

Dip Process: The process of covering a surface by means of dipping it into or through a molten bath of the coating material. This may be followed by dippings or baths into other solutions and/or materials to produce desired results.

Dip Tank: A tank, preferably lined with rubber, epoxy, or other nonmetallic, into which diecastings are dipped for cooling after leaving the machine.

Dip Tolerance (Lighting): With regard to outdoor lighting, the percentage of instantaneous voltage variation from normal that is required to extinguish a light source.

Dip, at the (flag signalling). : A flag hoist is said to be "at the dip" (dipped) when hoisted two-thirds of the way up to the block at the top of the hoist.

Dip, dual in-line pins. : Term used to describe the pin arrangement on an integrated circuit (ic) or a multiple (electric) switch.

Diplexer. : A device to enable simultaneous rf signal transmission and reception using a common antenna feed.

Dipole Antenna: A type of antenna commonly used in wireless networking devices. It has a signal range of 360 degrees horizontally and 75 degrees vertically.

Dipole Antenna: The antenna or a straight electrical conductor connected to radio frequency line of any signal line.

Dipole. : An antenna consisting of two elements, each approximately one quarter-wavelength in length and fed with radio frequency energy of opposing polarity at adjacent ends of the elements.

Dipped Joint: A thin joint made by dipping of the brick in a thin mortar.

Direct access: The ability of a retail customer to purchase electricity or other energy sources directly from a supplier other than their traditional supplier.

Direct Arc Furnace: An electric arc furnace in which the metal being melted is one of the poles.

Direct Blowing: The term used when one blower is blowing to one furnace at a time.

Direct Capacitance: The capacitance measured directly from conductor to conductor through a single insulating layer.

Direct Casting: Teeming from the ladle into the casting mold without the use of a tundish.

direct contact: Contact of persons or livestock with live parts.

Direct control load management: The magnitude of customer demand that can be interrupted at the time of the seasonal peak load by direct control of the system operator by interrupting power supply to individual appliances or equipment on customer premises. This type of control usually reduces the demand of residential customers.

Direct Current: Electric current in which electrons flow in one direction only. Opposite of alternating current.

Direct Current: An electrical current that flows in one direction only.

Direct Current (dc): Current from a power source that continually flows in the same direction. An electrical source of constant polarity.

Direct current (dc): Electric current in which electrons flow in one direction only. Opposite of alternating current.

Direct Current Resistance: The resistance offered by any circuit to the flow of direct current.

direct current, dc: An electric current flowing always in the same direction from positive to negative poles.

Direct electricity load control: The utility installs a radio-controlled device on the HVAC equipment. During periods of particularly heavy use of electricity, the utility will send a radio signal to the building in its service territory with this device and turn off the HVAC for a certain period.

direct energy conversion : Production of electricity from an energy source without transferring the energy to a working fluid or steam.

Direct gain: In direct-gain buildings, sunlight directly enters the home through the windows and is absorbed and stored in massive floors or walls. These buildings are elongated in the east-west direction, and most of their windows are on the south side. The area devoted to south windows varies throughout the country. It could be as much as 20% of the floor area in sunny cold climates, where advanced glazings or moveable insulation are recommended to prevent heat loss at night. These buildings have high insulation levels and added thermal mass for heat storage.

Direct insulation: Sunlight falling directly upon a collector. Opposite of diffuse insulation.

Direct labor hours: Direct labor hours worked by all mining employees at a mining operation during the year. Includes hours worked by those employees engaged in production, preparation, development, maintenance, repair, shop or yard work management, and technical or engineering work. Excludes office workers. Excludes vacation and leave hours.

direct lighting : Lighting by means of luminaires with a light distribution such that 90 to 100 per cent of the emitted luminous flux reaches the working plane direct, assuming that this plane is unbounded

Direct load control: This Demand-Side Management category represents the consumer load that can be interrupted at the time of annual peak load by direct control of the utility system operator. Direct Load Control does not include Interruptible Load. This type of control usually involves residential consumers.

Direct milling cost: Operating costs directly attributable to the processing of ores or other feed materials, including labor, supervision, engineering, power, fuel, supplies, reagents, and maintenance.

Direct mining cost: Operating cost directly attributable to the mining of ore, including costs for labor, supervision, engineering, power, fuel, supplies, equipment replacement, maintenance, and taxes on production.

Direct mode. : The operation of the several transmitters of a navigation system as a system without consideration to the value of individual transmitters as beacons. See indirect mode.

Direct nonprocess end use: Those end uses that may be found on commercial, residential, or other sites, as well as at manufacturing establishments. They include heating, ventilation, and air conditioning (HVAC), facility lighting, facility support, onsite transportation, conventional electricity generation, and other nonprocess uses. "Direct" denotes that only the quantities of electricity or fossil fuel used in their original state (i.e., not transformed) are included in the estimates.

Direct process end use: Those end uses that are specific to the carrying out of manufacturing. They include process heating, process cooling and refrigeration, machine drive, electrochemical processes, and other process uses. "Direct" denotes that only the quantities of electricity or fossil fuel used in their original state (i.e., not transformed) are included in the estimates.

Direct Reduced Iron: WHAT Processed iron ore that is iron rich enough to be used as a scrap substitute in electric furnace steelmaking. WHY As mini mills expand their product abilities to sheet steel, they require much higher grades of scrap to approach integrated mill quality. Enabling the mini mills to use iron ore without the blast furnace, DRI can serve as a low residual raw material and alleviate the mini mills' dependence on cleaner, higher priced scrap. HOW The impurities in the crushed iron ore are driven off through the use of massive amounts of natural gas. While the result is 97% pure iron (compared with blast furnace hot metal, which, because it is saturated with carbon, is only 93% iron), DRI is only economically feasible in regions where natural gas is attractively priced.

Direct Sequence Spread Spectrum: See "DSSS".

Direct Sequence Spread Spectrum: one of two approaches to spread spectrum modulation for digital signal transmission over the airwaves

Direct use: Use of electricity that

Direct utility cost: A utility cost that is identified with one of the DSM program categories (e.g. Energy Efficiency or Load Management).

Direct wave. : A wave that travels directly between the transmitter and receiver antenna without reflections from any object.

Direct-Current Compensator or Balancer: Comprises two or more similar direct-current machines (usually with shunt or compound excitation) directly coupled to each other and connected in series across the outer conductors a multiple-wire system of distribution, for the purpose of maintaining the potentials of the intermediate wires of the system, which are connected to the junction points between the machines.

Direct-Current Converter: A device which converts direct current to direct current, usually with a change in voltage.

Direction finding (df). : The process of determining the bearing of an electromagnetic emission.

Direction of Lay: The direction, either clockwise or counter-clockwise, of a conductor or group of conductors when looking axially down a cable length.

Directional (deviated) well: A well purposely deviated from the vertical, using controlled angles to reach an objective location other than directly below the surface location. A directional well may be the original hole or a directional "sidetrack" hole that deviates from the original bore at some point below the surface. The new footage associated with directional "sidetrack" holes should not be confused with footage resulting from remedial sidetrack drilling. If there is a common bore from which two or more wells are drilled, the first complete bore from the surface to the original objective is classified and reported as a well drilled. Each of the deviations from the common bore is reported as a separate well.

Directional Angle: The angular range within which an emitter, receiver, emitter/receiver pair or reflector can be rotated or shifted about on the optical axis and still have the photoelectric properly operate.

Directional Relay: A protection relay in which the tripping decision is dependent in part upon the direction in which the measured quantity is flowing.

Directional Relay: The relay which use an additional polarizing source of voltage or current to determine the direction of a fault.

Directional Solidification: The solidification of molten metal in a casting in such a manner that liquid feed metal is always available for that portion that is just solidifying.

Directional Valve: A valve whose primary function is to direct or prevent flow through selected channels.

Direct-on-Line: A method of motor starting, which full line voltage is applied to a stationary motor.

Directory. : The electronic database of authoritative information required for the correct operation of the service. It is to include address details, information management tags and capability descriptions for each user.

Dirt Capacity: The measure of volume (or weight) of particles that a filter or strainer will hold at the limit of operation.

disaggregation : The functional separation of the vertically integrated utility into smaller, individually owned business units (i.e. generation, dispatch/control, transmission, distribution).

discharge: Electrical discharge can occur by the release of the electric charge stored in a capacitor through an external circuit. It can also occur by the breakdown of gaseous dielectrics within solid dielectrics on the application of a field.

Discharge (Battery): The conversion of the chemical energy of a cell or battery into electrical energy and withdrawal of the electrical energy into a load.

Discharge Chutes: A discharge chute is any variety of ramp or funneling mechanism mounted at the exit of a piece of machinery and used to direct the exit of material away from the machine and/or to a specific location.

Discharge Current: The surge current that is dissipated through a surge arrester.

discharge current: The surge current that flows through the surge diverter during spark over or operation.

discharge lamp: Lamp in which the light is produced, directly or indirectly, by an electric discharge through a gas, a metal vapor, or a mixture of several gases and vapors.

Discharge Of Fluid:

Discharge rate: The rate, usually expressed in amperes or time, at which electrical current is

taken from the battery.

Discharge Rate (Battery): The rate of current flow from a cell or battery.

Discharge Valve : A valve that isolates a pump from the rest of the pumping system.

discharge voltage: [see residual voltage]

Discharged fuel: Irradiated fuel removed from a nuclear reactor during refueling. Also see Spent Fuel.

Discoloration: A change in the visual appearance of the material caused by formation of oxides when exposed to contaminating atmosphere, always at elevated temperatures.

Disconnect: Mechanical device, resembling a large knife switch, that is used as a safety device for isolating electrical equipment.

Disconnect Switch: A simple switch that is used to disconnect an electrical circuit. It may or may not have the ability open while the circuit is loaded.

Disconnect Switch: Disconnect switches use to interrupt or open an electrical circuit for purposes of inspection and maintenance

Disconnect Switches: Disconnect switches or circuit breakers are used to isolate equipment or to redirect current in a substation.

disconnecting means: A device or group of devices, or other means whereby all the ungrounded conductors of a circuit can be disconnected simultaneously from their source of supply.

Disconnecting Switch: A switch which is intended to open a circuit only after the load has been removed by some other means.

disconnector : A mechanical switching device which, in the open position, complies with the requirements specified for isolation. A disconnector is otherwise known as an isolator.

discount/interest Rate : The discount rate is used to determine the present value of future or past cash flows.

Discrete access. : (in lan technology) an access method used in star lans: each station has a separate (discrete) connection through which it makes use of the lan's switching capability. Contrast with shared access.

Discrete-delivery energy sources: Energy sources that must be delivered to a site.

Discretely variable.: Capable of one of a limited number of values; usually to describe digital signals or digital data transmission. Contrast with continuously variable.

Discrimination: The ability of a power protection system to differentiate between the conditions it was intended to operate and those it was not intended for.

discrimination: The ability to discriminate. The characteristics of protective devices must be such that a fault on one circuit will not disconnect another circuit.

Discrimination: The action of selecting the signal having a required characteristic, such as frequency or amplitude, by means of a discriminator.

Dish: A concave surface departing from a straight line edge to edge. Indicates transverse or across the width.

disk: A memory device which uses a magnetic media for the storage of information. Disk, as a term, has expanded into other areas often used to describe the shape of the storage media, that is floppy disk, compact disk, laser disk, or hard disk.

disk. : An electromagnetic storage medium for digital data.

Dislocation: A linear defect in the structure of a crystal.

Dispatching: The operating control of an integrated electric system involving operations such as (1) the assignment of load to specific generating stations and other sources of supply to effect the most economical supply as the total or the significant area loads rise or fall (2) the control of operations and maintenance of high-voltage lines, substations, and equipment; (3) the operation of principal tie lines and switching; (4) the scheduling of energy transactions with connecting electric utilities.

Dispersed Shrinkage: Small shrinkage cavities dispersed through the casting, which are not necessarily cause for rejection.

display: The visual representation of a signal on a screen.

Display converter. : (in ibm 3270 systems) a coaxial converter that allows asynchronous display terminals to emulate ibm 3278 display stations.

Display scope/display. : A cathode-ray tube used to display a variety of information or data as follows:
A-scope/display horizontal or vertical sweep depicting range only.
B-scope/display horizontal sweep depicting azimuth, vertical sweep depicting range.
C-scope/display horizontal sweep depicting azimuth, vertical sweep depicting elevation.
D-scope/display basic c-scope/display, but broken into horizontal strips in which trace (or pip) position roughly depicts range.
E-scope/display horizontal sweep depicting range, vertical sweep depicting elevation.
Eo-ppi-scope/display a double gun cathode-ray tube that presents a normal ppi display from which a circular centre section has been blanked out. In the centre section, a dot moving in azimuth with the rotating sweep line indicates present elevation by its distance from the scope/display centre.
F-scope/display horizontal displacement of spot (fated signal) depicting azimuth error angle or relative bearing, vertical sweep depicting elevation.
G-scope/display basic c-scope/display, with wings on the target trace which grow as range decreases.
H-scope/display horizontal sweep depicting azimuth, vertical sweep depicting range, and signal trace is bright line whose slope is proportional to line of elevation angle.
I-scope/display radial sweep synchronized with antenna conical scan. Trace appears as variable diameter circle whose radius indicates range and whose circumference brightens most at axial angle or maximum response. When 'on target', entire circumference is brightened.
J-scope/display circular sweep depicting range only with radial deflection of video signal.
Basic a-scope/display.
k-scope/display double target trace representing lobe signal strengths and hence error by relative amplitudes of trace. Basic a-scope/display with horizontal displacement of alternate scans for lobe switching.
L-scope/display same as k-scope/display with video response on alternate sweeps placed back-to-back, forming an envelope.
M-scope/display vertical deflection of horizontal range sweep. Basic a-scope/display with moveable range 'step' or 'notch' for rematching an accurate range reading.
N-scope/display combination of k- and m-scope/displays.
Ppi-scope/display revolving radial sweep depicting azimuth and (plan position indicator) range.
R-scope/display expansion of small portion of range sweep of a-scope/display.
Rhi-scope/display - expansion of one dimension of polar display with (range height indicator) horizontal sweep depicting range and expanded vertical sweep depicting height.

Display station, display terminal. : A device consisting of a keyboard and video or crt display. (in the ibm 3270 information display system, a 3278 is an example of a display station; an ascii crt terminal is an example of a display terminal).

display. : A visual presentation of data.

Disposition, natural gas: The removal of natural, synthetic, and/or supplemental gas, or any components or gaseous mixtures contained therein, from the responding company's facilities within the report State by any means or for any purpose, including the transportation of such gas out of the report State.

Disposition, petroleum: A set of categories used to account for how crude oil and petroleum products are transferred, distributed, or removed from the supply stream. The categories include stock change, crude oil losses, refinery inputs, exports, and products supplied for domestic consumption.

disruption. : Denial of service or corruption of information resulting from a single event, cause, or source; whether direct or indirect, accidental or intentional, rare or common. (au)

Disruption. : Denial of service or corruption of information resulting from a single event, cause, or source; whether direct or indirect, accidental or intentional, rare or common. (au)

Dissipation Factor: The ratio of the conductance of a capacitor, in which the material is the dielectric, to its susceptance; or the ratio of its parallel reactance to its parallel resistance, or the ratio of the power loss to the circulating KVA.

Dissolved Air Flotation (Daf): Dissolved air flotation (DAF) is a process used in water treatment, including the treatment of wastewaters, to capture solids or other materials in the water. Air is dissolved in the water while under pressure, then released on the surface of the water at atmospheric pressure. The bubbles created during this process help to capture suspended particles in the wastewater and float them to the surface for filtering or removal.

Dissolved Carbon: Carbon in solution in steel in either the liquid or solid state.

Distance measuring equipment (dme). : A radionavigation aid in the aeronautical radionavigation service that determines the distance of radiated electromagnetic energy caused by abnormal change of the refractive index with altitude. See anomalous propagation (ap).

Distillate fuel oil: A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.

Distillation unit (atmospheric): The primary distillation unit that processes crude oil (including mixtures of other hydrocarbons) at approximately atmospheric conditions. It includes a pipe still for vaporizing the crude oil and a fractionation tower for separating the vaporized hydrocarbon components in the crude oil into fractions with different boiling ranges. This is done by continuously vaporizing and condensing the components to separate higher boiling point material. The selected boiling ranges are set by the processing scheme, the properties of the crude oil, and the product specifications.

Distorted Pattern: A pattern untrue to the specified dimensions.

distortion: An undesired change in waveform. Distortion is a term that describes abnormal wave shapes.

Distortion: the unwanted or adverse changes occurs in any material by the means of environmental considerations

Distortion (1). : The unwanted changes in signal or signal shape that occurs during

transmission between 2 points.

Distortion (2). : The amount by which the output waveform differs from the input waveform. Note: distortion may exist in amplitude, frequency or phase modulation.

Distortion Factor: The ratio between the r.m.s. value of the harmonic content and the r.m.s. value of the nonsinusoidal quantity.

Distortion Factor: A measure for nonlinear distortions is the distortion factor. The harmonic distortion

Distribond: A siliceous clay containing Bentonite used as bond in molding sands.

Distributed architecture. : (in lan technology) a lan that uses a shared communications medium; used on bus or ring lans; uses shared access methods.

Distributed computing. : The name of the trend to move computing resources such as minicomputers, or personal computers closer to individual workstations. See also distributed processing.

Distributed Control System (DCS): Typically a large-scale process control system characterized by a distributed network of processors and I/O subsystems that encompass the functions of control, user interface, data collection, and system management. DCSs are commonly used in large industrial facilities, such as chemical plants, petroleum refineries, and paper mills.

Distributed Control System (Dcs): In a distributed control system, the control system components are distributed throughout the system, rather than operating from a centralized location. Each subsystem has a dedicated controller or control system and the collective control elements are monitored and controlled through network communications.

distributed generation : A distributed generation system involves small amounts of generation located on a utility's distribution system for the purpose of meeting local peak loads and/or displacing the need to build additional local distribution lines.

Distributed generator: A generator that is located close to the particular load that it is intended to serve. General, but non-exclusive, characteristics of these generators include an operating strategy that supports the served load; and interconnection to a distribution or sub-transmission system (138 kV or less).

Distributed I/O: A distributed input/output (I/O) system uses a network of sensors, transmitters, transducers, and monitoring devices to control a distributed system. Distributed I/O may be used in production systems, power distribution systems, and many other applications. Distributed I/O components are monitored and controlled by a control system with network communications to all the I/O components and subsystems.

Distributed power: Generic term for any power supply located near the point where the power is used. Opposite of central power. See 'stand-alone'; 'remote site.'

Distributed processing. : An arrangement that allows separate computers to share work on the same application program. Often erroneously used to mean distributed computing.

Distributed systems: Systems that are installed at or near the location where the electricity is used, as opposed to central systems that supply electricity to grids. A residential photovoltaic system is a distributed system.

Distributed/point-of-use water-heating system: A system for heating hot water, for other than space heating purposes, which is located at more than one space within a building. A point-of-use water heater is located at the faucet and heats water only as required for

immediate use. Because water is not heated until it is required, this equipment is more energy-efficient.

Distribution: The delivery of energy to retail customers.

distribution: Outside a building distribution refers to the process of delivering power from the transmission system to the premises. Inside the building, distribution is the process of using feeders and circuits to provide power to devices.

Distribution Automation: A system consisting of line equipment, communications infrastructure, and information technology that is used to gather intelligence about a distribution system. It provides analysis and control in order to optimize operating efficiency and reliability.

Distribution Automation: Smart Grid technology which improves reliability with real-time monitoring and intelligent control at substations

Distribution block, distribution frame. : Centralized connection equipment where telephone or data terminal wiring is terminated and cross-connections are made.

distribution board : An assembly containing switching or protective devices (e.g. fuses, circuit breakers, residual current operated devices) associated with one or more outgoing circuits fed from one or more incoming circuits, together with terminals for the neutral and protective circuit conductors. It may also include signalling and other control devices. Means of isolation may be included in the board or may be provided separately.

Distribution Bus: A distribution bus is a steel structure array of switches used to route power out of a substation.

distribution company Disco : The regulated electric utility entity that constructs and maintains the distribution wires connecting the transmission grid to the final consumer.

Distribution Feeder Circuits: These are the connections between the output terminals of a distribution substation and the input terminals of primary circuits. The distribution feeder circuit conductors leave the substation from a circuit breaker or circuit recloser via underground cables, called substation exit cables.

distribution line : This is a line or system for distributing power from a transmission system to a consumer. It is any line operating at less than 69,000 volt.

Distribution provider (electric): Provides and operates the wires between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the Distribution function at any voltage. NERC definition

Distribution Substation: These are located near to the end-users. Distribution substation transformers change the subtransmission voltage to lower levels for use by end-users.

Distribution system: The portion of the transmission and facilities of an electric system that is dedicated to delivering electric energy to an end-user.

Distribution System: A term used to describe that part of an electric power system that distributes the electricity to consumers from a bulk power location such as a substation. It includes all lines and equipment beyond the substation fence.

distribution system: The portion of an electric system (after the transmission system) that is dedicated to delivering electric energy to an end user.

Distribution System: the electrical power distribution system

Distribution Transformer: A transformer that reduces voltage from the supply lines to a lower voltage needed for direct connection to operate consumer devices.

Distribution Transformer: Transformers used to transfer the stepped down voltage to customers.

Distribution Transformers: Distribution transformers reduce the voltage of the primary circuit to the voltage required by customers.

Distribution use: Natural gas used as fuel in the respondent's operations.

Distribution Voltage: A nominal operating voltage of up to 38kV.

Distribution Voltage: the final voltage output by step down from main line for direct distribution to customers, it may vary at area to area.

Distribution, Sand Grain: Variation or uniformity in particle size of a sand aggregate when properly screened by U.S. Standards screens.

Distributor: A company primarily engaged in the sale and delivery of natural and/or supplemental gas directly to consumers through a system of mains.

distributor : A person who distributes electricity to consumers using electrical lines and equipment that he owns or operates.

District chilled water: Chilled water from an outside source used as an energy source for cooling in a building. The water is chilled in a central plant and piped into the building. Chilled water may be purchased from a utility or provided by a central physical plant in a separate building that is part of the same multibuilding facility (for example, a hospital complex or university).

District heat: Steam or hot water from an outside source used as an energy source in a building. The steam or hot water is produced in a central plant and piped into the building. The district heat may be purchased from a utility or provided by a physical plant in a separate building that is part of the same facility (for example, a hospital complex or university).

Disruptive Strength: Maximum strength of a metal when subjected to three principal tensile stresses at right angles to one another and of equal magnitude.

Disturbed Metal: The cold worked metal formed on a polished surface during the processes of grinding and polishing.

Disturbed Network Protocol: A proprietary communication protocol used on secondary networks between HMI, substation computers or bay computers and protective devices.

Disturbed Network Protocol: A proprietary communication protocol used on secondary networks between HMI, substation computers or bay computers and protective devices.

Ditch Valve: A valve for controlling high pressure raw water jets. The jets wash the ash from the sluice way to the ash pump hole.

Dither: A cyclic application of voltage across a solenoid or coil. Most often used to assure that the device driven by the coil or solenoid remains in a state of constant motion, thus reducing breakaway friction.

Dithering: The attempt color provided by the computer program in case of unsupported color by the software or browser.

Diversion: 1.) A situation that occurs when a coil/s intended for an order doesn't meet quality standards or customers specifications and is therefore diverted to meet another customer's specifications. In addition, coils can be diverted to complete another customer's order or for other reasons as necessary. 2) Removing a product from its original order. Synonymous with

Reapplication.

Diversity: The electric utility system's load is made up of many individual loads that make demands upon the system usually at different times of the day. The individual loads within the customer classes follow similar usage patterns, but these classes of service place different demands upon the facilities and the system grid. The service requirements of one electrical system can differ from another by time-of-day usage, facility usage, and/or demands placed upon the system grid.

Diversity: it may be defined under some considerations the maximum time available having maximum load on any machine or equipment.

Diversity exchange: An exchange of capacity or energy, or both, between systems whose peak loads occur at different times.

diversity exchange : Exchange of capacity or energy between systems that have peak loads occurring at different times.

diversity factor: The ratio of the sum of the maximum power demands of the subdivisions, or parts of a system, to the maximum demand of the whole system or of part of the system under consideration.

Diversity Factor: The ratio of the sum of the maximum power demand of the subdivisions, or parts of a system, to the maximum demand of the whole system or part of the system under consideration.

diversity factor : The ratio of the sum of the non-coincident maximum demands of two or more loads to their coincident maximum demand for the same period.

Diversity system. : A system of communication in which a single received signal is derived from a combination of, or selections from, plurality of transmission channels or paths.

Diverted Coil: (DRV) A coil that is no longer being sent to its original order but is being sold elsewhere.

Diverter Valves: A diverter valve is generally described as an valve that redirects the flow of a material from the main path. Diverter valves can be used to redirect fluid or gas flow in a piping system or to act as a pressure relief valve in some systems. Diverter valves take on many different forms and functions, depending on the specific application.

Divestiture: The stripping off of one utility function from the others by selling (spinning-off) or in some other way changing the ownership of the assets related to that function.

Stripping off is most commonly associated with spinning-off generation assets so they are no longer owned by the shareholders that own the transmission and distribution assets.

Dividers, Springs: Dividers whose legs are held together at the hinged end by the pressure of a c shaped spring.

Dividing Head : A machine tool holding fixture which positions the work for accurately spacing holes, slots, flutes and gear teeth and for making geometric shapes. When geared to the table lead screw, it can be used for helical milling operations.

Divorced Pearlite : Pearlite in which the cementite has been spheroidized by prolonged annealing just below the Ac1 point, or by annealing at the same temperature after cold working.

DLC: Diesel locomotive cable

Dlc, data link control. : A communications protocol that sets up, controls, checks, and terminates information transfer between stations on a data link. See also hdlc and sdlc.

Dmi, digital multiplexed interface. : (in lan technology) a voice/data pabx standard (supported by at&t) for using t1 transmission that involves 64 kbps channels, representing a move toward an open architecture via isdn. Compare with cpi.

DMZ: Demilitarized Zone. Networking has corrupted the term and used it to refer to an unprotected subnet connected to a local network, but outside the protection of a firewall.

Dnic, data network identification code. : (in a packet-switched network) a 4-digit pdn identifier.

DNS: Domain Name System. The DNS is an international network of Internet domain name servers, names, and addresses that enables locating computers on the internet.

Do All Saw: A trade name given to a type of band saw used for sawing metal.

Docket: A formal record of a Federal Energy Regulatory Commission proceeding. These records are available for inspection and copying by the public. Each individual case proceeding is identified by an assigned number.

Doctor Blade Steel Strip: A hardened and tempered spring steel strip, usually blued, produced from approximately .85 carbon cold rolled spring steel strip specially selected for straightness and good edges. Sometimes hand straightened or straightened by grinding and cur to desired lengths. This product is used in the printing trade as a blade to uniformly remove excess ink (dope) from the rolls; hence its name.

DOD: 'Depth of Discharge,' from 100-percent state of charge (SOC), in a battery or battery system.

DOD: Depth of Discharge

Dod, dod, department of defense. : Part of usa government executive branch that handles military matters, including data communications; responsible for some lan-associated protocols and standards, such as tcp/ip, as well as selected fips.

DOE: Department of Energy.

Doghouse: Structure on the BOP roof where the junction header power relief vents through to the atmosphere.

Dolly: See "Stringing Block".

Dolomite: A material that is used to add magnesium oxide to the sinter.

Domain Host Control Protocol: See "DHCP".

Domain Host Control Protocol: It provides the access of IP address to the server from defined range of network connected computers.

Domain Name System: See "DNS".

Domain Name System: The domain name translating system in to internet protocol address.

Domestic: Crude oil produced in the United States including the Outer Continental Shelf (OCS).

Domestic crude oil: Domestic inland consumption is the sum of all refined petroleum products supplied for domestic use (excludes international marine bunkers). Consumption is calculated by product by adding production, imports, crude oil burned directly, and refinery fuel and losses, and then subtracting exports and charges in primary stocks (net withdrawals is a plus quantity and net additions is a minus quantity).

Domestic inland consumption: Collectively, those businesses (whether U.S. or foreign-based) that operate under the laws and regulations pertaining to the conduct of commerce within the United States and its territories and possessions and that engage in activities within

the United States, its territories, and possessions specifically directed toward uranium exploration, development, mining, and milling; marketing of uranium materials; enrichment; fabrication; or acquisition and management of uranium materials for use in commercial nuclear powerplants.

Domestic uranium industry: An Original Vehicle Manufacturer that assembles vehicles in the United States for domestic use. The term "domestic" pertains to the fifty states, the District of Columbia, commonwealths, territories, and possessions of the United States.

Domestic vehicle producer: See United States.

donor: A type of impurity that adds electrons to the atoms of a semiconductor substance.

Donor: An n-type dopant that puts an additional electron into an energy level very near the conduction band; this electron is easily excited into the conduction band where it increases the electrical conductivity over that of an undoped semiconductor.

Donor level: The level that donates conduction electrons to the system.

Door: The fuse tube of a fused cutout.

Door Switch: A momentary contact switch normally installed in a door-jamb. The switch is activated when the door is opened or closed.

Dopant: A chemical element (impurity) added in small amounts to an otherwise pure semiconductor material to modify the electrical properties of the material. An n-dopant introduces more electrons. A p-dopant creates electron vacancies (holes).

Doping: The addition of dopants to a semiconductor.

Doppler effect. : The phenomenon evidenced by the change in the observed frequency of a wave caused by a time rate of change in the effective length of the path of travel between the source and the point of observation.

Doppler radar. : Any form of radar which detects radial motion of a distant object relative to a radar apparatus by means of the 'doppler effect'.

Dos, disk operating system. : A program or set of programs that instruct a disk-based computing system to schedule/supervise work, manage computer resources, and operate/control peripheral devices.

Dose: A quantity of radiation measured at a certain point expressed in roentgens, rems or rads.

Dose Meter, Integrating: Ionization chamber and measuring system designed for determining total radiation administered during an exposure. In medical radiology the chamber is usually designed to be placed on the patient's skin. A device may be included to terminate the exposure when it has reached a desired value.

Dose Rate: Dose per unit time.

Dose, Exposure: Quantity of radiation measured in air in roentgens without backscatter at a given point.

Dosimeter: Instrument used to detect and measure an accumulated dosage of radiation; in common usage it is a pencil size ionization chamber with a built in self reading electrometer; used for personal monitoring. See Dosimeter, Pocket

Dosing Pumps: A dosing pump is a specialized pump designed to deliver small and accurate quantities of liquids, chemicals, or medicines. While dosing pumps are most often associated with medical treatment, they are also used in chemical processing and in the water treatment industry. The specific application of the dosing will determine the pump specifications and

any regulations that may apply to the design and use of the dosing pump.

dot notation: A notation used to denote similar ends of mutually coupled coils.

Dot Peen Marking: Dot peen marking is a surface marking process that uses impact force to create a pattern of indentations, or dots, in a surface. The pattern of dots can be used to represent a graphic image or a series of alphanumeric characters. The marking depth is typically on the order of 1 to 2 millimeters and is very consistent.

Double Action Cylinders: A double action cylinder is a type of hydraulic cylinder in which force is created on both the push and pull of the piston, thereby creating force in both directions. The cylinder contains inlets and seals on both sides. Due to the presence of the piston shaft on one side, the force created by a double action cylinder is unbalanced, generating more in the push direction when the full face of the piston is available.

Double Annealing: As applied to hypoeutectoid steel, a process of heating to above the upper critical point (AC3) and holding at that temperature until complete solution of the carbide has been achieved then cooling rapidly and reheating immediately to above A3 and slowly cooling.

Double Arming Bolt: A special long bolt used to assemble two cross arms, one on each side of the pole.

Double circuit line: A transmission line having two separate circuits. Because each carries three-phase power, at least six conductors, three per circuit, are required.

Double Contact Recessed: A lampholder having two "PAD" type recessed contacts and used with high-output fluorescent lamps.

Double Diaphragm Pumps: The Air Lift Pump is a type of deep well pump, sometimes used to remove water from mines. It can also be used to pump a slurry of sand and water or other "gritty" solutions. In its most basic form this pump has NO moving parts, other than an air compressor. The efficiency of the air compressor is a prime factor in determining the overall efficiency of the pump. Increased efficiency in the pump itself can be achieved but with added complexity. Shown here is a simple Air Lift Pump. Compressed air is piped down a shaft. The air then returns up a Discharge Pipe carrying water with it. The pump works by "aerating" the water in the discharge pipe. The added air lowers the specific gravity of the fluid mixture. Since it is lighter than the surrounding water, it is pushed upwards. This type of pump can lift 20 to 2000 gallons per minute, up to about 750 feet. The discharge pipe must be placed deep into the water, from 70% of the height of the pipe above the water level (for lifts to 20 feet) down to 40 percent for higher lifts.

double exponential waveform: A waveform obtained by taking the difference of two exponential waveforms. Usually they have time constants which are highly different to give a waveform with fast rise time and relatively slow overall decay.

Double frequency shift keying (dfsk). : A multiplex system in which two telegraph signals are combined and transmitted simultaneously by a method of frequency shifting between four radio frequencies.

Double hop. : The re-transmission of a communications link received from one satellite to another using an independent ground terminal.

Double Impression Method: A way of determining approximate Brinell hardness by placing a hardened steel ball between a specimen of known hardness and the metal to be tested and pressurizing in an arbor press.

double insulation: Insulation comprising both basic insulation and supplementary insulation.

Double Pole Switch: A switch that makes or breaks the connection of conductors of a single branch circuit.

Double sideband transmission. : That method of communication in which the frequencies produced by the process of modulation are symmetrically spaced both above and below the carrier frequency and are all transmitted.

Double Skin : A defect consisting of a secondary layer of metal sometimes found on top poured ingots.

Double Tempering: A retempering operation sometimes necessary for steel containing retained austenite which breaks down during cooling from the first tempering to form a new and hence untempered martensite.

Double Weave: Mesh braid with rows of two strands each.

Doublebruned: Deadburn; not be mistaken for two firing.

Double-Current Generator: Supplies both direct and alternating currents from the same winding.

Doughnut: A venturi system that creates a draft with jets of water that draws the molten slag from the spout and to the sluiceway.

Dove Tail: An interlocking connection frequently used for the assembly of interlocking extrusions; it is assembled by a sliding action

Down Converters: the electronic equipment which converts the signals in to low frequency.

Down Feed : A seldom used method of feeding work into milling cutters. The work is fed in the same direction as the portion of the cutters which comes in contact with it.

Down link. : A transmission link carrying information from a satellite or spacecraft to earth. Typically down links carry telemetry, data and voice.

Downcomers: Hollow pipes that allow the plater solution to return from the plater cells to the distribution tank.

Downhand Welding: Welding deposited along a horizontal line and surface.

downline loading. : The process of sending configuration parameters, operating software, or related data from a central source to individual stations.

Downsprue : The first channel, usually vertical, which the molten metal enters; so called because it conducts metal down into the mold.

Downstream : The passage beyond a device, normally at the outlet of direction of flow.

Downtime: Time lost from normal casting activity, due to unscheduled interruptions.

Downtime. : Period when all or part of a system or network is not available to end users due to failure or maintenance. See availability.

Dpnss. : Digital private network signalling system (dnpss) is a uk signalling standard for use between pabxs in a private network.

Dpsk, differential phase shift keying. : The modulation technique used in bell 201 modems; see also dibit.

DQ: Draw quality 3D more flexible grade of steel.

DR: Rubber range & dryer cord (C.S.A.).

Draft: Lower or bottom section of a mold or pattern.

Drafter.: The person who actually composes a message for release by the originator or releasing officer.

Drain Line: A passage in a hydraulic system that is sized and assigned to components that require a connection to a low pressure passage to the system reservoir.

Drain Valve: A valve that is opened to remove oil pressure from a system or a component of a system.

Drain Wire: In a cable an uninsulated wire laid over the component or components and used as a ground connection.

Drainage basin: The land drained by a river system.

DRAM, Dynamic RAM: A type of semiconductor memory that stores data as capacitor charges that need to be refreshed periodically.

Draw: A term used for 1) to temper, 2) to remove pattern from mold, 3) an external contraction defect on surface of mold.

Draw Feed Stock: Rod or wire that is subsequently drawn to a smaller size.

Draw Peg: A wooden peg used for drawing patterns.

Draw Plate: A plate attached to a pattern to facilitate drawing of a pattern from the mold.

Draw Quality: More flexible grade of steel

Draw Redraw: (DRD) Two piece. Process for making two piece cans in which a circular blank is drawn into a die to form a shallow cup and then is redrawn on a second or third die to produce a can body of the desired dimensions. Plate is coated prior to the forming process.

Draw Screw: A threaded rod with an eye screwed into a pattern to enable it to be drawn from the mold.

Draw Spike: A steel spike used to rap and draw a pattern from the sand; it is driven into the wood of the pattern, as opposed to a Draw Screw, which threaded.

Draw Thin Redraw: (DTR) An enhancement of the DRD process for making two piece can body utilizing high tensile TFS that has an organic polymeric coating applied prior to the forming operations. The patented DTR process is a means of subjecting the coated feedstock to forming strains such that the metal and coating avoid compacting and subsequent sidewall burnishing, thus enhancing the integrity of the organic coating. The resultant sidewall is thinned during the drawing and redrawing operations, thus facilitating the specified can body dimensions using a smaller starting blank size than that required for DRD.

Drawdown: The lowering of the water level of a reservoir as a result of withdrawing water.

Drawdown (maximum): The distance that the water surface of the reservoir is lowered from the normal full elevation to the lowest allowable elevation as the result of the withdrawal of water for the purposes of generating electricity.

Drawing: The process of reducing a cylindrical rod or wire to a desired diameter by pulling the wire through dies.

Drawing: In the manufacture of wire, pulling the metal through a die or series of dies for reduction of diameter to specified size.

Drawing Back: Reheating after hardening to a temperature below the critical for the purpose of changing the hardness of the steel.

Drawing Quality: (DQ) Flat rolled products produced from either deep drawing rimmed steel or extra deep drawing aluminum killed steels. Special rolling and processing operations aid in producing a product, which can stand extreme pressing, drawing or forming, etc., without creating defects.

Drawings: Removing pattern from the mold or mold from pattern in production work. See

also Temper

Draw-Lead: A cable or solid conductor that has one end connected to the transformer or a reactor winding and the other end drawn through the bushing hollow tube and connected to the top terminal of the bushing.

Drawn: Mechanically formed by tension through or in a die.

Drawn Over Mandrel: A procedure for producing specialty tubing using a drawbench to pull tubing through a die and over a mandrel, giving excellent control over the inside diameter and wall thickness. Advantages of this technique are its inside and outside surface quality and gauge tolerance. Major markets include automotive applications and hydraulic cylinders.

DRB : Demonstrated Reserve Base

Drdf. : Digital resolution direction finding. A precision position fixing system.

Dredge mining: A method of recovering coal from rivers or streams.

Dressing: The act of removing the glaze and dulled abrasives from the face of a grinding wheel to make it clean and sharp. See Truing.

Dried Sand: Sand which has been dried by mechanical dryer prior to use in core making.

Drier: A material, as alcohol ammonium nitrate, sodium perborate and manganese oleate, added to a core or mold mixture to remove or reduce the water content.

Drift: The measure of movement of a device after a preset condition is applied. Normally drift is measured with varying temperature, although drift may be plotted against any variable, such as humidity, etc.

drift mine: is driven horizontally into coal that is exposed or accessible in a hillside. In a hydraulic mine, high-pressure water jets break the coal from a steeply inclined, thick coalbed that would be difficult to mine with the usual underground methods. The coal is then transported to the surface by a system of flumes or by pipeline. Although currently not in commercial use in the United States, hydraulic mining is used in western Canada.

Drift mine: A mine that opens horizontally into the coal bed or coal outcrop. Drill and equip development wells, development-type stratigraphic test wells, and service wells, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment, and the well head assembly.

Drill Bushing: A hardened steel guide inserted in jigs, fixtures or templates for the purpose of providing a guide for the drill in drilling holes in their proper or exact location.

Drill Chuck: A device used to grip and attach them to a rotating spindle.

Drill Jig : A jig which holds parts or units of a structure and by means of bushings, guides the drill so that the holes are properly located.

Drill Pipe: Pipe used in the drilling of an oil or gas well. Drill pipe is the conduit between the wellhead motor and the drill bit. Drilling mud is pumped down the center of the pipe during drilling, to lubricate the drill bit and transmit the drilled core to the surface. Because of the high stress, torque and temperature associated with well drilling, drill pipe is a seamless product.

Drill Press: A drilling machine with a counterbalanced spindle which makes it possible for the operator to control accurately the rate at which the drill is fed into the work. The sensitive drill press usually contains drills that are less than 1/2 inch diameter and which rotate at high speeds.

Drill Rod: A term given to an annealed and polished high carbon tool steel rod usually round

and centerless ground. The sizes range in round stock from .013 to 1 1/2 diameter. Commercial qualities embrace water and oil hardening grades. A less popular but nevertheless standard grade is a non deforming quality. Drill Rods are used principally by machinists and tool and die makers for punches, drills, taps, dowel pins, screw machine parts, small tools, etc.

Drill Sleeve: An adapter with an internal and external taper which fits tapered shank tools such as drills or reamers to adapt them to a larger size machine spindle.

Drill Socket: An adapter similar to a sleeve except that it is made to adapt a larger tapered shank tool to smaller size spindle.

Drill, Center: A combination drill and countersink.

Drill, Twist: A commonly used metal cutting drill, usually made with two fluted running around the body.

Drilling: The act of boring a hole (1) to determine whether minerals are present in commercially recoverable quantities and (2) to accomplish production of the minerals (including drilling to inject fluids).

Drilling and equipping of wells: The drilling and equipping of wells through completion of the "christmas tree."

Drilling arrangement: A contractual agreement under which a working interest owner (assignor) assigns a part of a working interest in a property to another party (the assignee) in exchange for which the assignee agrees to develop the property. The term may also be applied to an agreement under which an operator assigns fractional shares in production from a property to participants for cash considerations as a means of acquiring cash for developing the property. Under a "disproportionate cost" drilling arrangement, the participants normally pay a greater total share of costs than the total value of the fractional shares of the property received in the arrangement.

Drilling Muds: Drilling muds is a term given to the various types of liquids used in drilling bore holes for petroleum, natural gas, and water. The liquids are inserted into the bore hole throughout the drilling process to help prevent unwanted liquids and gases from the surrounding formations from entering the well. In addition, the drilling muds help to keep the drill bit cool and clean and help to remove material from the well during the drilling process. The type of drilling mud selected is based on the drilling job and the geologic formations being drilled through.

Drip Tube: Small sight glasses used to check and adjust the rate of flow of drive oil.

Drip-Proof: Apparatus is designed as drip-proof when it is constructed so that successful operation is not interfered with when falling drops of liquid or solid particles strike or enter the enclosure at an angle of 0 to 15 degrees from vertical.

drive: A machine used to drive or cause rotation in a piece of apparatus.

Drive Fit: One of several classes of fits in which parts are assembled by pressing or forcing one part into another.

Drive Oil: Lubricating oil used on different components of the finishing mill.

Drive Oil Alarm: A warning received when drive oil pressure is low or pressure is stopped.

Drive Oil System: A system which encompasses all the components needed to deliver drive oil to the finishing mill. It consists of both #1 and #2 drive oils pumped from the roughing mill.

Drive Side: The side of the strip that is nearest to the drive motors that power the line.

Driver (1). : A software module that controls an input/output port or external device.

Driver (2). : Short for line driver.

Driveshaft: A driveshaft is a mechanical component used to transfer rotational motion and force, or torque, from one component to another. Usually a driveshaft connects a drive motor on one side to the piece of machinery being driven on the other. Driveshafts usually incorporate one or more joings and coupling to assist in carrying the stresses associated with transmitting torque.

DRL: Double random length line pipe with a 35?+ average lengths

DRO: Neoprene range & dryer cord (C.S.A.).

Droop: A casting defect caused by sand dropping from the cope or other overhanging section.

Drop Ball: A heavy weight, usually ball or pear shaped, dropped from a height to break large pieces of metal scrap. Also used to strengthen warp castings.

Drop Forging: A forging made with a drop hammer.

Drop Gate: A term for a pouring gate or runner leading directly into the top of the mold.

Drop Hammer: A forging hammer than depends on gravity for its force.

Drop Off Or Drop Out: Sand falling from the Cope of a mold. See Drop

Drop. : Individual connections (sometimes called nodes) on a multipoint (also called multidrop) circuit.

Drop-Out: A relay drops out when it moves from the energized position to the unenergized position.

Dross: Sediment which settles in bottom of the ZINC pot on the galvanize line. Also top dross, which floats on surface of pot and is skimmed off. A different type of dross also occurs on the top of the zinc pot, which is skimmed off on a regular time frame.

DRT: Plastic ranger & dryer cord (C.S.A.).

Drum Heads: Removable hinged man way cover on both ends of a boiler drum.

Drum Ladle: A cylindrical refractory lined ladle that is completely enclosed. A removable cover at the pouring spout permits addition of molten metal.

Drum Pusher: Device used to remove a steel drum from the entry coil traverse car.

Drum Vent: Manual valve that is used to relieve pressure on drums.

Dry (coal) basis: Coal quality data calculated to at heoretical basis in which no moisture is associated with the sample. This basis is determined by measuring the weight loss of a sample when its inherent moisture is driven off under controlled conditions of low temperature air-drying followed by heating to just above the boiling point of water (104 to 110 degrees Centigrade).

Dry Analysis: A term applied to spectrographic analysis.

Dry bottom boiler: No slag tanks at furnace throat area. The throat area is clear. Bottom ash drops through the throat to the bottom ash water hoppers. This design is used where the ash melting temperature is greater than the temperature on the furnace wall, allowing for relatively dry furnace wall conditions.

Dry Break Coupling: A dry break coupling is a type of hose or pipe connector used to contain the fluid in the hoses upon disconnect. Dry break couplings are common in applications involving chemicals that cannot be leaked into the environment or where the cost

of the fluid or safety of the worker is a concern.

Dry Charge (Battery): The process by which the electrodes are formed and assembled in a charged state. The cell or battery is activated when electrolyte is added.

Dry Film Weight: Dry coating film weight is normally calculated in grams per square meter (gm/m²) or milligrams per square inch (mg/in²). Accurate control of dry film weight is essential to ensure that the coating material will possess its intended properties of physical and chemical resistance.

Dry gas: See Dry natural gas.

Dry hole: An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well. Also see Well.

Dry hole charge: The charge-off to expense of a previously capitalized cost upon the conclusion of an unsuccessful drilling effort.

Dry hole contribution: A payment (either in cash or acreage) that is required by agreement only if a test well is unsuccessful and that is made in exchange for well test and evaluation data.

dry location: A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

Dry natural gas: Natural gas which remains after 1) the liquefiable hydrocarbon portion has been removed from the gas stream (i.e., gas after lease, field, and/or plant separation); and 2) any volumes of nonhydrocarbon gases have been removed where they occur in sufficient quantity to render the gas unmarketable. Note Dry natural gas is also known as consumer-grade natural gas. The parameters for measurement are cubic feet at 60 degrees Fahrenheit and 14.73 pounds per square inch absolute. Also see Natural gas.

Dry natural gas production: The process of producing consumer-grade natural gas. Natural gas withdrawn from reservoirs is reduced by volumes used at the production (lease) site and by processing losses. Volumes used at the production site include (1) the volume returned to reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; and (2) gas vented and flared. Processing losses include (1) nonhydrocarbon gases (e.g., water vapor, carbon dioxide, helium, hydrogen sulfide, and nitrogen) removed from the gas stream; and (2) gas converted to liquid form, such as lease condensate and plant liquids. Volumes of dry gas withdrawn from gas storage reservoirs are not considered part of production. Dry natural gas production equals marketed production less extraction loss.

Dry Pan: A grinding machine of heavy rollers or millers testing on a bed. Screens or slits allow fine material to pass through.

Dry Permeability: The property of a molded mass of sand bonded or unbonded, dried at 220-230 B0F (105-110 B0C) and cooled to room temperature that allows passage of gases resulting during pouring of molten metal into a mold.

Dry production: See Dry natural gas production.

Dry Rolled Finish: Finish obtained by cold rolling on polished rolls without the use of any coolant or metal lubricant, of material previously plain pickled, giving a burnished appearance.

Dry Run: The process of checking the control panel to assure that all controls are functioning properly.

Dry Sand Casting: The process in which the sand molds are dried at above 212 B0F (100 B0C) before using.

Dry Sand Mold: A mold from which the moisture has been removed by heating.

Dryer: Dries the strip after a rinsing process.

Dry-Type Transformers: Transformers that use only drytype materials for insulation. These have no oils or cooling fluids and rely on the circulation of air about the coils to provide necessary cooling. Such units are usually limited in size to a few hundred kVA because of prob

Dscs. : Defense satellite communications system. Us military (army and air force) world-wide strategic and tactical satellite communications system, part of the dcs and currently used by the ukmscs

DSL: Digital Subscriber Line. A method to Lines carry data at high speeds over standard telephone lines.

DSM: [see demand side management]

DSM : Demand-Side Management

Dsr, data set ready. : An rs-232 modem interface control signal (sent from the modem to the dte on pin 6) which indicates that the modem is connected to the telephone circuit. Usually a prerequisite to the dte issuing rts.

DSSS: Direct Sequence Spread Spectrum. Used in radion transmission, DSSS alters, or modulates, the signal by spreading it over a wider frequency, generating what seems like signal noise to anything except the device that is designed to reassemble the signal in

Dsu, data service unit. : Dce which replaces a modem in connections to dds; a baseband device, often included in the cost of the dds circuits.

Dte, data terminal equipment.: The equipment serving as the data source, the data sink, or both. Refers to both terminals and computer ports.

DTIM: Delivery Traffic Indication Message. A DTIM is a signal sent as part of a beacon by an access point to a client device in sleep mode, alerting it that a packet of data awaits delivery.

Dtmf, dual-tone multiple-frequency. : Term used to describe the audio signalling frequencies on touch-tone push-button telephones.

dtr, data terminal ready. : An rs-232 modem interface control signal (sent from the dte to the modem on pin 20) which indicates that the dte is ready for data transmission and which requests that the modem be connected to the telephone circuit.

DTW: Dealer Tank Wagon

dual channel oscilloscope: An oscilloscope that has two independent input connectors and vertical sections and can display them simultaneously.

Dual Coaxial Cable: A configuration consisting of two individually insulated conductors laid parallel or twisted and placed within an overall shield and sheath.

Dual Element Fuse: Fuse with a speacial design that utilizes two individual elements in series inside the fuse tube. One element, the spring actuated trigger assembly, operates on overloads up to 5-6 times the fuse current rating. The other element, the short circuit section, operates on short circuits up to their interrupting rating.

Dual fuel vehicle (1): A motor vehicle that is capable of operating on an alternative fuel and on gasoline or diesel fuel. These vehicles have at least two separate fuel systems which inject

each fuel simultaneously into the engine combustion chamber.

Dual fuel vehicle (2): A motor vehicle that is capable of operating on an alternative fuel and on gasoline or diesel fuel. This term is meant to represent all such vehicles whether they operate on the alternative fuel and gasoline/diesel simultaneously (e.g., flexible-fuel vehicles) or can be switched to operate on gasoline/diesel or an alternative fuel (e.g., bi-fuel vehicles).

Dual Metal Centrifugal Casting: Centrifugal castings produced by pouring a different metal into the rotating mold after the first metal poured.

Dual Voltage Switch: A switch used to select primary windings of a transformer.

Dual Voltage Switch: Dual Voltage switches are used to change connection of de-energized transformer windings between series and parallel to provide different common transformer voltage ratios.

Dual Voltage Transformer: A transformer that has switched windings allowing its use on two different primary voltages.

Dual-Band: The systems which work using Dual-band signals on specific frequency bands. The frequency of these two bands may be variable according to location.

Dual-fired unit: A generating unit that can produce electricity using two or more input fuels. In some of these units, only the primary fuel can be used continuously; the alternate fuel(s) can be used only as a start-up fuel or in emergencies.

duality principle: The duality principle establishes an analogy between similar variables when governed by analogous differential equations. For example, series circuits and parallel circuits are analogous if resistance is replaced by conductance, conductance by resistance, inductance by capacitance or vice versa, current by voltage or vice versa. There is also an analogy between electrical and magnetic circuits.

Duct: Two or more ducts or conduits used as part of a system.

Duct: Duct is the passageways provided in any machine or structure for the purpose of air or liquid passing

Duct: An underground or overhead tube used for carrying electrical conductors.

Duct Bank: A channel for holding and protecting conductors and cables, made of metal or an insulating material, usually circular in cross section like a pipe. Also referred to as Conduit.

Duct Bank: Duct banks are groups of conduits to provide the pathway and protect cabling.

Duct Runs: Ducts are hollow tubes running from manhole to manhole inside a conduit in an underground system. They are of various sizes usually from 2 to 6 inches in diameter.

duct : A closed passageway formed underground or in a structure and intended to receive one or more cables which may be drawn in.

Ductile Crack Propagation: Slow crack propagation that is accompanied by noticeable plastic deformation and requires energy to be supplied from outside the body.

Ductility: The ability of a material to deform plastically without fracturing, being measured by elongation or reduction of area in a tensile test, by height of cupping in an Erichsen test or by other means.

Ducting. : Trapping and refraction of radiated electromagnetic energy caused by abnormal change of the refractive index with altitude. See anomalous propagation (ap).

Ductwork: Ducts that carry exhaust solids from the boilers to the scrubber area.

Dumb terminal. : A term used to describe a teletype or teletype-compatible terminal. The dumb terminal is an asynchronous terminal that may operate at speeds as high as 9600 bps or

higher. The dumb terminal is an ascii terminal that, although it may be “intelligent” in many of the functions it provides, uses no communications protocol.

Dummy Block: A tight fitting steel block placed between the ram and the billet in an extrusion press to prevent metal from leaking backward along the ram during extrusion.

Dummy message. : A message sent for some purpose other than its content, which may consist of dummy groups or may have a meaningless text.

Dump energy: Energy generated in a hydroelectric plant by water that cannot be stored or conserved and which energy is in excess of the needs of the system producing the energy.

Dumping: Dumping occurs when imported merchandise is sold in, or for export to, the domestic market at less than the normal value of the merchandise, i.e., a price which is less than the price at which identical or similar merchandise is sold in the comparison market, the home market (market of exporting country) or third country market (market used as proxy for home market in cases where home market cannot be used). The normal value of the merchandise cannot be below the cost of production.

Dumping Margin: The amount by which the normal value exceeds the export price or constructed export price of the subject merchandise.

Dumping Valve: A type of single solenoid valve that when energized will open to quickly release the pressure in a hydraulic cylinder.

Dunker Roll: A roll used in the tanks that keeps the strip going through the tank.

Duplex: A category of stainless steel with high amounts of chromium and moderate nickel content. The duplex class is so named because it is a mixture of austenitic (chromium nickel stainless class) and ferritic (plain chromium stainless category) structures. This combination was originated to offer more strength than either of those stainless steels. Duplex stainless steels provide high resistance to stress corrosion cracking (formation of cracks caused by a combination of corrosion and stress) and are suitable for heat exchangers, desalination plants, and marine applications.

Duplex: An adapter that provides two female receptacle openings when plugged into a single receptacle opening.

Duplex Cable: A cable composed of two conductors twisted together, usually one insulated and one bare neutral.

Duplex Receptacle: Two receptacles in a common housing or mounting means which accepts two plugs.

Duplex. : Designating or pertaining to a mode of operation or the equipment concerned, by which information can be transmitted in both directions simultaneously between two points.

Duralumin: The trade name applied to the first aluminum copper magnesium type of age hardenable alloy (17S), which contains nominally 4% Cu, 1/2% Mg. The term is sometimes used to include the class of wrought aluminum copper magnesium alloys that harden during aging at room temperature.

Durometer: A measurement used to denote the hardness of a substance (usually of thermosetting and thermoplastic materials).

Dust: Small solid particles created by the breaking up of larger particles by an process.

Dust Collection Systems: A dust collection system is a mechanical system designed to remove dust and debris from a production environment. Dust collections systems can be designed and used in small applications such as a personal workshop or in large industrial-

scale production environments. A dust collection system usually includes the blower or vacuum driving the system, a collection of hoses and fittings, filters and/or dust separators, and a dust collection bin.

Dust Separators: A dust separator is a component of a dust collection system designed to help filter out smaller particles from larger ones. A dust separator is used in a two stage system in which the separator is placed between the machine creating the dust and the suction device driving the dust collection system.

Dust Suppression Systems: Dust suppression systems provide a means of dust control, helping to minimize the amount of dust stirred up into the environment during processes such as construction and farming. Misting, or depositing small amounts of water to the surface is a popular form of dust suppression.

dustproof: Constructed or protected so that dust will not interfere with its successful operation.

Dustproof: Constructed or protected so that dust will not interfere with its successful operation.

Dust-Proof: Apparatus is designed as dust-proof when so constructed or protected that the accumulation of dust with or without the device will not interfere with its successful operation.

Dusttight: Constructed so that dust will not enter the enclosing case under specified test conditions.

Dust-Tight: Apparatus is designated as dust-tight when so constructed that the dust will not enter the enclosing case under specified test conditions.

Duty Cycle: The ratio of pulse width to period, indicates the percentage of time a pulse is present during a cycle.

Duty, continuous: A service requirement that demands operation at a substantially constant load for an indefinitely long time.

Duty, intermittent: A service requirement that demands operation for alternate intervals of load and no load, load and rest, or load, no load, and rest.

Duty, periodic: A type of intermittent duty in which the load conditions regularly reoccur.

Duty, short time: A requirement of service that demands operations at a substantially constant load for a short and definitely specified time.

Duty, varying: A requirement of of service that demands operation at loads, and for intervals of time, both of which may be subject to wide variation.

DV/DT (Delta Voltage/Delta Time): DV/DT is the rate of change in voltage over a certain time frame.

DWV: Dielectric Withstanding Voltage

Dye Penetrant Inspection: A method for detecting surface porosity or cracks in metal. The part to be inspected is cleaned and coated with a dye which penetrates any flawa that may be present. The surface is wiped clean and coated with a a white powder. The powder absorbs the dye held in the defects indicating their location.

Dynamic Behavior: Describes how a control system or an individual unit reacts with time when subjected to an input signal.

Dynamic DNS: This is a system by which Internet Service Providers temporarily assign IP addresses. This allows the reassignment of the address when no longer in use.

Dynamic DNS: The method of updating the DNS system for hostname address and other information automatically.

Dynamic Error: The error that results during the transient state, that is, the state when the system is moving from one steady state condition to another.

Dynamic Range: The difference between the smallest and largest usable or ratio of the softest sound to the loudest sound in a musical instrument

dynamo: Device for converting mechanical energy into electrical energy. The mechanical energy of rotation is converted into electrical energy in the form of a current in the armature.

dynamometer instrument: This instrument is also a moving coil instrument except that in this case, the permanent magnet is replaced by a pair of fixed coils to give the fixed field.

Dynamotor: A converter with both motor and generator in one magnetic field, either with two armatures, or with one armature having two separate windings

dyne: Unit of force in the c.g.s. system. $1 \text{ dyne} = 10^{-5} \text{ N}$

E: Elevator lighting and control cable. Rubber insulation, three overall braids, outer one flame-retardant and moisture resistant. May have steel supporting strand in center, 300V.

E :

E.C.A. Number: Engineering Corporation of America This is the computerized annealing sequence number used by the Firing Model.

E3. Electromagnetic environmental effects. : The impact of the electromagnetic environment upon the operational capability of military forces, equipment, systems and platforms. It encompasses all electromagnetic disciplines, including electromagnetic compatibility, electromagnetic interference, electromagnetic vulnerability, electromagnetic pulse, hazards of electromagnetic radiation to personnel, ordnance and volatile materials, and natural phenomena effects of lightning and static.

E85: A fuel containing a mixture of 85 percent ethanol and 15 percent gasoline. See Motor gasoline (finished).

E95: A fuel containing a mixture of 95 percent ethanol and 5 percent gasoline

EAR: Estimated Additional Resources

EAR: Illinois, Indiana, Michigan, Ohio, and Wisconsin;

EAR: Alabama, Kentucky, Mississippi, and Tennessee;

EAR : Consists of the Appalachian Coal Basin. The following comprise the Eastern Region Alabama, eastern Kentucky, Georgia, Maryland, Mississippi, Ohio, Pennsylvania, Virginia, Tennessee, North Carolina, and West Virginia.

Earing: Wavy projections formed at the open end of a cup or shell in the course of deep drawing because of difference in directional properties. Also termed scallop.

earth: The conductive mass of the Earth, whose electric potential at any point is conventionally taken as zero.

Earth Continuity Monitors: The earth is commonly used as a ground, reference, or return path for electrical circuits and systems. An earth continuity monitor is an electrical instrumentation device designed to measure and monitor the earth connection. The continuity monitor is used as part of the electrical control system.

Earth Continuity Relays: An earth continuity relay is an electronic switch designed to monitor the continuity of the earth circuit in a supply cable and to shut off power if earth continuity is at unsafe levels.

Earth cover. : The portion of the earth's surface viewed by a satellite from geosynchronous, see also orbits.

earth electrode resistance: The resistance of an earth electrode to Earth.

earth electrode : A conductor or group of conductors in intimate contact with, and providing an electrical connection to, Earth.

earth fault current : A fault current which flows to Earth.

earth fault loop impedance: The impedance of the earth fault current loop starting and ending at the point of earth fault. The earth fault loop comprises the following, starting at the point of fault the circuit protective conductor, and the consumer's earthing terminal and earthing conductor, and for TN systems, the metallic return path, and for TT and IT systems, the earth return path, and the path through the earthed neutral point of the transformer, and the transformer winding, and the phase conductor from the transformer to the point of fault.

Earth Fault Protection System: A protection system which is designed to operate during faults to earth.

earth leakage circuit breaker, elcb: The elcb is designed to protect both equipment and users from fault currents between the live and earth conductors by detecting the rise in voltage of the frame earth connection with respect to a reference earth.

earth leakage current: (see Protective conductor current).

Earth Leakage Protection Relays: A protection relay is a switch designed to trip and turn off a circuit in the event of unsafe conditions. Earth leakage relays are specifically designed to detect earth fault currents and trip when a pre-determined fault level is reached. Earth leakage protection relays perform the same function as earth leakage circuit breakers, though the terminology may vary depending on the specific location the relay or breaker is used.

earth leakage : Flow of current from a live conductor to earth in an unintended path through the insulation.

earthed concentric wiring : A wiring system in which one or more insulated conductors are completely surrounded throughout their length by a conductor, for example a metallic sheath, which acts as a PEN conductor.

earthed equipotential zone : A zone within which exposed conductive parts and extraneous conductive parts are maintained at substantially the same potential by bonding, such that, under fault conditions, the differences in potential between simultaneously accessible exposed and extraneous conductive parts will not cause electric shock.

earthing: Connecting a conductor, or exposed conductive parts of an installation, to the Earth to maintain earth potential.. The Earth is taken as the reference.

earthing: Connection of the exposed conductive part of an installation to the main earthing terminal of that installation. Earthing conductor. A protective conductor connecting the main earthing terminal of an installation to an earth electrode or to other means of earthing.

Earthing Transformer: A three-phase transformer intended essentially to provide a neutral point to a power system for the purpose of grounding.

Earthing Transformer: The three-phase transformer connected to the power system to provide a neutral connection for earthing.

Earthmoving Equipment Buckets: Earthmoving equipment buckets are scoop or bucket-shaped attachments on construction equipment such as backhoes and bulldozers. The shape and size of the buckets vary based on the machine it's being mounted to and the material being

moved.

Earth-return circuit. : A circuit which has a conductor (or a number of conductors in parallel) between two points, and which is completed through earth at these two points.

Eastern: Bridgeport, CT, Washington, DC, Boston, MA, Baltimore, MD, Portland, ME, Buffalo, NY, New York City, NY, Ogdensburg, NY, Philadelphia, PA, Providence, RI, Norfolk, VA, St. Albans, VT.

Easy Open End: A convenience feature can end designed to be opened by utilizing an integral tab opener to tear the container lid along a tear line formed in the lid.

Eb/no. : Ratio of energy received per information bit and noise power spectral density.

Ebcdic, extended binary coded decimal interchange code. : An 8-bit character code used primarily in ibm equipment. The code provides for 256 different bit patterns.

EC: Electrical conductor (electrical grade aluminum - now known as Alloy 1350).

Eccentricity: Like concentricity a measure of the center of a conductor's location with respect to the circular cross section of the insulation; expressed as a percentage of center displacement of one circle within the other.

ECCS: Electrolytic Chromium Coated Sheets.

echo: Effect produced when sound is reflected from a surface sufficiently far away for the reflected sound to be separately distinguishable.

echo area. : See scattering cross-section (of a target).

Echo suppressor. : A device used by telcos or ptt's that blocks the receive side of the line during the time that the transmit side is in use.

Echo. : The return of transmitted data.

Echoplex. : A method of checking data integrity by returning characters to the sending station for verification of data integrity.

Ecma, european computer manufacturers association. : A western european trade organisation that issues its own standards and belongs to iso. Membership include western european computer suppliers and manufacturers.

economic dispatch : The distribution of total generation requirements among alternative sources for optimum system economy with consideration to both incremental generating costs and incremental transmission losses.

economic efficiency : A term that refers to the optimal production and consumption of goods and services. This generally occurs when prices of products and services reflect their marginal costs. Economic efficiency gains can be achieved through cost reduction, but it is better to think of the concept as actions that promote an increase in overall net value (which includes, but is not limited to, cost reductions).

economic energy : Energy produced and substituted for the traditional but less economical source of energy. Economic energy is usually sold without capacity and is priced at variable costs plus administration costs.

Economizer: A specially designed bank of boiler tubes used to heat the boiler feed water before it enters the boiler drum. Boiler exhaust gases pass across the economizers which are located in the exhaust ductwork and the heat is transferred to the feed water. Preheating of the feed water helps to reduce boiler fuel requirements.

Economizer Recirculator: Line that connects waterwall to economizer to ensure positive flow through economizer so as to not allow steam in the economizer during O2 blow.

Economy of scale: The principle that larger production facilities have lower unit costs than smaller facilities.

Eddy Current: The current that is generated in a transformer core due to the induced voltage in each lamination. It is proportional to the square of the lamination thickness and to the square of the frequency.

Eddy Current: when a conductor is exposed to a changing magnetic field the eddy current get induced due to relative motion of the field source and conductor. The currents induced in conductors to oppose the change in flux that generated. Them.

eddy current loss: power loss in magnetic materials due to eddy currents. This loss is proportional to the square of the thickness and hence can be reduced by the use of laminations.

Eddy Current Separator: In magnetics, an eddy current is created when a conductor and the magnetic field source are moving relative to each other. This relative motion causes a changing magnetic field that generates a magnetic flux counter to that created by the magnetic field. The result is a repulsive force between the magnet and the conductor. An eddy current separator makes use of this magnetic reaction to remove non-ferrous metals from magnetic metals, usually in conjunction with a conveyor belt system transporting the mixed material.

Eddy Current Testing: Nondestructive testing method in which eddy current flow is induced in the test object. Changes in the flow caused by variations in the object are reflected into a nearby coil or coils for subsequent analysis by suitable instrumentation and techniques.

Eddy Currents: A condition caused by an uneven roll surface. It is seen on the edges of a coil, not across the full width of the coil.

eddy currents: Localized induced circulating electric currents set up in metal parts not normally meant to carry currents due to changes in electromagnetic fields. Also known as Foucault currents.

Edge Buckle: Edge buckle is similar to center buckle except that the condition occurs in one, or both edges, of the strip and is generally confined to a narrow portion of the width.

Edge Buildup: Condition that results when burred or damaged plate causes the edge of the coil to be higher in coating than the center of the coil.

Edge Filing: A method whereby the raw or slit edges of strip metal are passed or drawn one or more times against a series of files, mounted at various angles. This method may be used for deburring only or filing to a specific contour including a completely rounded edge.

Edge Rolling : Rolling a strip of steel to smooth the edges. By removing the burr off the coil, it is safer for customers to manipulate.

Edge Strain Or Edge Breaks: Creases extending in from the edge of the temper rolled sheet.

Edge Wave: A condition in the band of steel where the edges (in the direction of rolling) are longer than the center.

Edge-defined film-fed growth (EFG): A method for making sheets of polycrystalline silicon in which molten silicon is drawn upward by capillary action through a mold.

Edges: Many types of edges can be produced in the manufacture of flat rolled metal products. Over the years the following types of edges have become recognized as standard in their respective fields. . Copper Base Alloys Slit, Slit and Edge Rolled, Sheared, Sawed, Machined or Drawn . Sheet Steels or Aluminum Sheet Mill Edge, Slit Edge or Sheared Edge. . Strip Steels and Stainless Strip . No. 1 Edge A Smooth, uniform, round or square edge, either slit or

filed or slit and edge rolled as specified, width tolerance +/- .005. . No. 2 Edge A natural sound mill edge carried through from the hot rolled band. Has not been slit, filed, or edge rolled. Tolerances not closer than hot rolled strip limits. . No. 3 Edge Square, produced by slitting only. Not filed. Width tolerances close. . No. 4 Edge A round edge produced by edge rolling either from a natural mill edge or from slit edge strip. Not as perfect as No. 1 edge. Width tolerances liberal. . No. 5 Edge An approximately square edge produced by slitting and filing or slitting and rolling to remove burr. . No. 6 Edge A square edge produced by square edge rolling, generally from square edge hot rolled occasionally from slit strip. Width tolerances and finish not as exacting as No. 1 edge.

Edison Base: A lampholder having a threaded internal shell approximately 1" in diameter which accepts lamp bulbs of the size commonly used for domestic illuminating.

EI: Edison Electric Institute.

Eeprom, electrically erasable programmable read-only memory. : An eeprom that can be cleared with electrical signals rather than the traditional ultraviolet light.

EERA: Electrical Equipment Representatives Association. EERA is an association of electrical manufacturers representatives. Additional information on EERA can be found at www.eera.org. Young & Company is a member of EERA.

effective earthing: Effective earthing avoids having dangerous potentials on the equipment even during electrical faults and also ensures the proper operation of electrical protection equipment during fault conditions. A system is said to be effectively earthed if the factor of earthing does not exceed 80%, and non-effectively earthed if it does.

Effective full-power days: The number of effective full-power days produced by a unit is a measure of the unit's energy generation. It is determined using the following ratio Heat generation (planned or actual) in megawatt days thermal (MWdt) (divided by) Licensed thermal power in megawatts thermal (MWt).

Effective Internal Resistance (Battery): The apparent opposition to current within a battery that manifests itself as a drop in battery voltage proportional to discharge current. Its value is dependent on battery design, state of charge, temperature and age.

Effective Power (Watts): See "Watt"

Effective Range: The range of values of the characteristic quantity or quantities. For example the energizing quantities to which the relay will respond and satisfy the requirements to precision.

Effective Range: The maximum load at which a machine may be expected to be accurate and achieve the desired effect

Effective Setting: The setting of a protection system including the effects of current transformers, this effective setting can be expressed in terms of primary current or secondary current from the current transformers.

effective value: The effective value of a periodic waveform (current or voltage) is the equivalent constant waveform that delivers the same average power to a resistor as the periodic waveform.

Effectively Grounded: Intentionally connected conductors or electric equipment to earth, where the connection and conductors are of sufficiently low impedance to allow the conducting of an intended current.

efficacy: Relative ability to produce a desired effect.

Efficiency: The ratio of output to input. Volumetric efficiency of a pump is the actual output, in gpm, divided by the theoretical or design output.

efficiency: Means of getting the same or better service while using fewer resources.

Efficiency: The efficiency of an electrical machine or apparatus is the ratio of its useful power output to its total power input.

Efficiency: Efficiency is the percentage of the input power that is actually converted to work output from the motor shaft. Efficiency is stamped on the nameplate of most domestically-produced electric motors

Efficiency (Lighting): A ratio of light emitted from a luminaire to the light produced by the bare lamp.

efficiency of a machine: The ratio of the output energy to the input energy, usually expressed as a percentage. The efficiency of a machine can never exceed unity or 100%.

Effluent: A combination of water and particulates pulled from exhaust gases that is sent to Hydromation for treatment.

Ehf - extremely high frequency. : A range of frequencies extending from 30ghz to 300ghz.

EHV: See "Extra High Voltage".

EIA: The Energy Information Administration. An independent agency within the U.S. Department of Energy that develops surveys, collects energy data, and analyzes and models energy issues. The Agency must meet the requests of Congress, other elements within the Department of Energy, Federal Energy Regulatory Commission, the Executive Branch, its own independent needs, and assist the general public, or other interest groups, without taking a policy position.

EIA: (Electronic Industries Association) Industry trade association which works with the Telecommunications Industry Association (TIA) in developing standards.

Eirp - effective isotropic radiated power. : The effective power supplied by a satellite transponder or a ground station transmitter to its associated antenna multiplied by the gain of the antenna.

EIS: Environmental Impact Statement

Ejector Pins: Moveable pins in take pattern die tha t?push? to remove cast pattern form the dies.

Elastic Deformation: Stretching of the material below the point at which a permanent set takes place. That is, in the range where the metal acts spring like or elastic.

Elastic Limit: Maximum stress that a material will withstand without permanent deformation. See Yield Strength

elastic modulus or modulus of elasticity: The ratio of the stress to the strain in a given material.

Elastic Resistance Welded Pipe: ERW pipe is made from strips of hot rolled steel, which are passed through forming rolls and welded. While seamless pipe is traditionally stronger and more expensive than ERW pipe, ERW technology is improving and the technique now accounts for approximately 48% of annual tonnage shipments of oil country tubular goods.

Elastic Strain: Dimensional changes accompanying stress where the original dimensions are restored upon release of the stress.

elasticity of demand : The ratio of the percentage change in the quantity demanded of a good to the percentage change in price.

Elastomer: A material that at room temperature stretches under low stress to at least twice its length and snaps back to original length upon release of stress.

Elastomer: Any elastic, rubber like substance such as natural or synthetic rubber.

Elbow: A device used to connect a medium voltage cable (435KV nominal) to an electrical component such as a switch or transformer. Its name is derived from the fact that its shape is an "L". Elbows are available in ratings of 200, 600 and 900 Ampere and are m

Electrocleaning : An anodic treatment. A cleaning, polishing, or oxidizing treatment i which the specimen or work is made the anode in a suitable electrolyte; an inert metal is used as cathode and a potential is applied.

Electric Actuators: An actuator is a mechanical device used to move one component relative to another. An electrical actuator is an electrically-driven device that is used to turn on or off another device. There is no one design for an electrical actuator - they are designed specifically for the job they need to perform. The actuator may be linear, rotational, or oscillatory, with a short or long travel distance.

Electric Arc: Sustained visible discharge of electricity across gap in circuit or between electrodes. Arcing takes place in switches and other make and break devices when a circuit is opened, and at the brushes of a commutator type motor if brush contact is bad.

Electric Arc Furnace: (EAF or EF) An economical method of steelmaking that is energized by an electric arc flowing between two bottom electrodes. Furnace charges consist of purchased scrap.

Electric baseboard: An individual space heater with electric resistance coils mounted behind shallow panels along baseboards. Electric baseboards rely on passive convection to distribute heated air to the space.

electric capacity : The ability of a power plant to produce a given output of electric energy at an instant in time.

electric charge: Charge is an electrical property of the atomic particles of which matter is made. The elementary particle called the electron is negatively charged while the proton is equally positively charged so that normal matter is electrically neutral. [Unit coulomb or C]

electric circuit: An interconnection of electrical elements.

Electric circuit: Path followed by electrons from a power source (generator or battery) through an external line (including devices that use the electricity) and returning through another line to the source.

Electric Controller: A device, or group of devices, which serves to control, in some manner, the electric power delivered to the apparatus to which it is connected.

Electric current: The flow of electric charge. The preferred unit of measure is the ampere.

electric current: An electric current flows through a conductor when there is an overall movement of charge through it and is measured as the time rate of change of charge. [Unit ampere or A]

Electric current: A flow of electrons; electricity.

electric distribution company : The company that owns the power lines and equipment necessary to deliver purchased electricity to the consumer.

Electric Drum Heaters: An electric drum heater is a metallic band used to heat drums of materials, usually chemicals, in process applications. The drum heater usually includes a spring clamps to securely fasten the band to the drum and a thermostat to help regulate the

temperature of the drum contents.

Electric energy: The energy carried by free electrons from a source to a load. Also, the potential energy of a stationary charge.

Electric energy: The ability of an electric current to produce work, heat, light, or other forms of energy. It is measured in kilowatthours.

Electric expenses: The cost of labor, material, and expenses incurred in operating a facility's prime movers, generators, auxiliary apparatus, switching gear, and other electric equipment for each of the points where electricity enters the transmission or distribution grid.

electric field: The electric field is a region in which a force is exerted on a charged particle. It is defined as the force acting on a unit positive charge placed at that point.

electric flux: A measure of the electricity coming out from a charged surface. [Unit coulomb]

electric flux density: Electric flux passing through unit area perpendicular to the direction of the flux. [Unit C/m²]

Electric Furnace Steel: Steel made in any furnace where heat is generated electrically, almost always by arc. Because of relatively high cost, only tool steels and other high value steels are made by the electric furnace process.

Electric generation: See Gross generation and Net generation.

Electric generation industry: Stationary and mobile generating units that are connected to the electric power grid and can generate electricity. The electric generation industry includes the "electric power sector" (utility generators and independent power producers) and industrial and commercial power generators, including combined-heat-and-power producers, but excludes units at single-family dwellings.

Electric generator: A facility that produces only electricity, commonly expressed in kilowatthours (kWh) or megawatthours (MWh). Electric generators include electric utilities and independent power producers.

Electric Gradient: The space rate of change of potential at a point in the direction of the greatest change.

Electric Header Valve: An electric valve that will isolate a blower from the rest of the blowers that are on line.

Electric hybrid vehicle: An electric vehicle that either (1) operates solely on electricity, but contains an internal combustion motor that generates additional electricity (series hybrid); or (2) contains an electric system and an internal combustion system and is capable of operating on either system (parallel hybrid).

Electric industry reregulation: The design and implementation of regulatory practices to be applied to the remaining traditional utilities after the electric power industry has been restructured. Reregulation applies to those entities that continue to exhibit characteristics of a natural monopoly. Reregulation could employ the same or different regulatory practices as those used before restructuring.

Electric industry restructuring: The process of replacing a monopolistic system of electric utility suppliers with competing sellers, allowing individual retail customers to choose their supplier but still receive delivery over the power lines of the local utility. It includes the reconfiguration of vertically-integrated electric utilities.

electric light: Illumination produced by the use of electricity. The light sources may be of the incandescent, fluorescent, gas discharge or LED type.

Electric line truck: A truck used to transport personnel, tools, and material for electric supply line work.

Electric Linear Actuator: An actuator is a mechanical device used to move one component relative to another. An electrical actuator is an electrically-driven device that is used to turn on or off another device. There is no one design for an electrical actuator - they are designed specifically for the job they need to perform. In a linear actuator, the motion of the actuator and the driven component is constrained to linear motion.

Electric Motor: An electromechanical device that converts electrical power into rotary motion. The resultant power output is measured in horsepower.

electric motor: Device for converting electrical energy into mechanical energy in the form of rotation.

Electric motor vehicle: A motor vehicle powered by an electric motor that draws current from rechargeable storage batteries, fuel cells, photovoltaic arrays, or other sources of electric current.

Electric non-utility: Any entity that generates, transmits, or sells electricity, or sells or trades electricity services and products, where costs are not established and recovered by regulatory authority. Examples of these entities include, but are not limited to, independent power producers, power marketers and aggregators (both wholesale and retail), merchant transmission service providers, self-generation entities, and cogeneration firms with Qualifying Facility Status.

Electric operating expenses: Summation of electric operation-related expenses, such as operation expenses, maintenance expenses, depreciation expenses, amortization, taxes other than income taxes, Federal income taxes, other income taxes, provision for deferred income taxes, provision for deferred income-credit, and investment tax credit adjustment.

Electric plant (physical): A facility containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

electric plant (physical) : A facility that contains all necessary equipment for converting energy into electricity.

Electric plant acquisition adjustment: The difference between (a) the cost to the respondent utility of an electric plant acquired as an operating unit or system by purchase and (b) the depreciated original cost, estimated if not known, of such property.

electric polarization: A type of polarisation occurring in a dielectric.

Electric power: The rate at which electric energy is transferred. Electric power is measured by capacity and is commonly expressed in megawatts (MW).

electric power: Electric power is given by the product of the potential difference and the current.

Electric power (P): The rate at which energy is consumed in a circuit or load. Measured in watts (W).

Electric power grid: A system of synchronized power providers and consumers connected by transmission and distribution lines and operated by one or more control centers. In the continental United States, the electric power grid consists of three systems the Eastern Interconnect, the Western Interconnect, and the Texas Interconnect. In Alaska and Hawaii, several systems encompass areas smaller than the State (e.g., the interconnect serving

Anchorage, Fairbanks, and the Kenai Peninsula; individual islands).

Electric power plant: A station containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

Electric power sector: An energy-consuming sector that consists of electricity only and combined heat and power(CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public--i.e., North American Industry Classification System 22 plants. See also Combined heat and power (CHP) plant and Electricity only plant.

electric power supplier : Non-utility provider of electricity to a competitive marketplace.

Electric power system: An individual electric power entity--a company; an electric cooperative; a public electric supply corporation as the Tennessee Valley Authority; a similar Federal department or agency such as the Bonneville Power Administration; the Bureau of Reclamation or the Corps of Engineers; a municipally owned electric department offering service to the public; or an electric public utility district (a "PUD"); also a jointly owned electric supply project such as the Keystone.

Electric pump for well water: This pump forces the water from a well below ground level up into the water pipes that circulate through the house. When this pump is not working, there is a limited supply of running water in the house.

Electric rate: The price set for a specified amount and type of electricity by class of service in an electric rate schedule or sales contract.

Electric rate schedule: A statement of the electric rate and the terms and conditions governing its application, including attendant contract terms and conditions that have been accepted by a regulatory body with appropriate oversight authority.

Electric Shears: Tool used to cut heavy gauge steel.

electric shock: A dangerous physiological effect resulting from the passing of an electric current through a human body or livestock. Injury to the skin or internal organs that results from exposure to an electrical current. Electric shock occurs when the body becomes a part of an electric circuit. The electrical current must enter the body at one point and leave at another. The human body is a good conductor of electricity. Direct contact with electrical current can be potentially fatal. While some electrical shocks may appear not to be serious, there still may be serious internal damage, especially to the heart and brain.

Electric Steering Gear: An electric steering gear is a component used in automobile power steering systems. The steering gear is connected to an electric motor which provides a steering assist force based on the conditions of the road and the response between the steering wheel and the driveshaft.

Electric Strength: The maximum potential gradient that a material can withstand without rupture. Also called Dielectric Strength and Disruptive Gradient.

Electric supply: Conductors used to transmit electric energy and their necessary supporting or containing structures. Signal lines of more than 400 volts are always supply lines within this section, and those of less than 400 volts are considered as supply lines, if so run and operated throughout.

Electric supply equipment: Equipment that produces, modifies, regulates, controls, or safeguards a supply of electric energy.

Electric system loss: Total energy loss from all causes for an electric utility.

Electric system reliability: The degree to which the performance of the elements of the

electrical system results in power being delivered to consumers within accepted standards and in the amount desired. Reliability encompasses two concepts, adequacy and security. Adequacy implies that there are sufficient generation and transmission resources installed and available to meet projected electrical demand plus reserves for contingencies. Security implies that the system will remain intact operationally (i.e., will have sufficient available operating capacity) even after outages or other equipment failure. The degree of reliability may be measured by the frequency, duration, and magnitude of adverse effects on consumer service.

electric system : All of the elements needed to distribute electrical power. It includes overhead and underground lines, poles, transformers, and other equipment.

Electric utility: A corporation, person, agency, authority, or other legal entity or instrumentality aligned with distribution facilities for delivery of electric energy for use primarily by the public. Included are investor-owned electric utilities, municipal and State utilities, Federal electric utilities, and rural electric cooperatives. A few entities that are tariff based and corporately aligned with companies that own distribution facilities are also included.

electric utility: An enterprise engaged in the production and/or distribution of electricity for use by the public.

Electric utility: An organization responsible for the installation, operation, or maintenance of an electric supply system.

Electric utility company: See Electric utility.

Electric utility divestiture: The separation of one electric utility function from others through the selling of the management and ownership of the assets related to that function. It is most commonly associated with selling generation assets so they are no longer owned or controlled by the shareholders that own the company's transmission and distribution assets.

Electric utility generator: A generator that is owned by an electric utility, (see definition of electric utility) or a jointly owned generator with the greatest share of the generator being electric utility owned. Note If two or more owners have equal shares of ownership in a generator, it is considered to be an electric utility generator if any one of the owners meets the definition of electric utility.

Electric utility restructuring: The introduction of competition into at least the generation phase of electricity production, with a corresponding decrease in regulatory control.

Electric utility sector: The electric utility sector consists of privately and publicly owned establishments that generate, transmit, distribute, or sell electricity primarily for use by the public and that meet the definition of an electric utility. Non utility power producers are not included in the electric sector.

electric welding: In electrical welding, a very high electric current produces the heat needed to melt the material and join two metals together.

Electric zone: A portion of the grid controlled by the independent system operator.

electrical degree: One cycle in a rotating electric machine is accomplished when the rotating field moves from one pole to the next pole of the same polarity. There are 360 electrical degrees in this time period. [i.e. for each pair of poles there are 360 electrical degrees. In a machine with more than one pair of poles, one electrical cycle is completed for each pair of poles in the mechanical cycle; or the electrical degrees per revolution is obtained by

multiplying the number of pairs of poles by 360.]

Electrical Degree: One 360th part of a cycle.

Electrical Distribution Boards: An electrical distribution board is an electrical system component that is used to divide an electrical power signal into multiple branch circuits. The distribution board should also be equipped with circuit breakers or other forms of fault protection to protect the circuits and the environment to which power is supplied.

electrical equipment : Any item for such purposes as generation, conversion, transmission, distribution or utilisation of electrical energy, such as machines, transformers, apparatus_ measuring instruments, protective devices, wiring systems, accessories, appliances and luminaires.

Electrical Forklift Trucks: An electrical forklift truck is a human-operated piece of machinery used to lift and move equipment and materials. Forklifts are powered from a battery and have transmissions and controls to manipulate the forklift's drive system and the mechanism controlling the forks. Forklifts are often counterbalanced, with significant weight placed at the aft end of the vehicle to counter the weight of the load on the forks.

Electrical grid: An integrated system of electricity distribution, usually covering a large area.

Electrical Hazard: A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.

Electrical Hazard: the dangerous condition where human can make electrical contact with energized equipment or a conductor or wires

electrical heating: The heating characteristic of an electric current is used extensively in industrial and domestic heating applications. Electric heating can be obtained from (a) resistance heating, (b) induction heating, (c) eddy current heating (d) dielectric heating, and (e) electric arc heating.

electrical installation (abbr Installation) : An assembly of associated electrical equipment supplied from a common origin to fulfil a specific purpose and having certain co-ordinated characteristics.

Electrical Length: The length of cable expressed as degrees of a cycle or fraction of a wavelength for the signal transmitted. The equivalent electrical length of a cable equals physical length times the square root of the dielectric constant.

Electrical Load: That part of the electrical system which actually uses the energy or does the work required.

Electrical Precipitator: In air pollution control, the use of electrodes in stack emissions emitting high voltage; particles 0.1 micron and smaller can be attached and collected at discharge electrode.

Electrical Relay: A device designed to produce sudden predetermined changes in one or more electrical circuits after the appearance of certain conditions in the controlling circuit.

Electrical Safety: Recognizing hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death.

Electrical Steel: Steel that includes silicon. The silicon content allows the steel to minimize energy loss during electrical applications. (See Silicon Electrical Steel)

Electrical system energy losses: The amount of energy lost during generation, transmission, and distribution of electricity, including plant and unaccounted for use.

electrically independent earth electrodes: Earth electrodes located at such a distance from one another that the maximum current likely to flow through one of them does not significantly affect the potential of the other(s).

Electrically Safe Work Condition: A state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

Electricity: The physical phenomena arising from the behavior of electrons and protons that is caused by the attraction of particles with opposite charges and the repulsion of particles with the same charge. The physical science of such phenomena. Also, electric current used or regarded as a source of power.

Electricity: A form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.

Electricity: The flow of electrons through a conducting medium.

electricity: A form of energy produced by the flow of particles of matter and consists of commonly attractive positively (protons [+]) and negatively (electrons [-]) charged atomic particles. A stream of electrons, or an electric current.

Electricity: The power that causes all natural phenomena not known to be caused by something

Electricity broker: An entity that arranges the sale and purchase of electric energy, the transmission of electricity, and/or other related services between buyers and sellers but does not take title to any of the power sold.

Electricity congestion: A condition that occurs when insufficient transmission capacity is available to implement all of the desired transactions simultaneously.

Electricity demand: The rate at which energy is delivered to loads and scheduling points by generation, transmission, and distribution facilities.

Electricity demand bid: A bid into the power exchange indicating a quantity of energy or an ancillary service that an eligible customer is willing to purchase and, if relevant, the maximum price that the customer is willing to pay.

Electricity generation: The process of producing electric energy or the amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatthours (kWh) or megawatthours (MWh).

Electricity generation, gross: See Gross generation.

Electricity generation, net: See Net generation.

Electricity only plant: A plant designed to produce electricity only. See also Combined heat and power (CHP) plant.

Electricity paid by household: The household paid the electric utility company directly for all household uses of electricity (such as water heating, space heating, air-conditioning, cooking, lighting, and operating appliances.) Bills paid by a third party are not counted as paid by the household.

Electricity sales: The amount of kilowatthours sold in a given period of time; usually grouped by classes of service, such as residential, commercial, industrial, and other. "Other" sales include sales for public street and highway lighting and other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

Electro Galvanizing: Galvanizing by Electro deposition of zinc on steel

Electro Magnetic: Magnetism caused by the flow of an electric current.

Electro Mechanical Assembly: An electro-mechanical assembly is a collection of electrical components and mechanical connectors put together into an assembled unit. This term is often applied to cable assemblies, in which one or more different types of conductors are combined into a cable bundle and terminated with a pin connector.

Electro Mechanical Protection Relays: A protection relay is a type of switch used in electrical circuits to monitor and protect against an overload or fault condition. The protection relay may operate by monitoring any type of electrical measurement, include current, voltage, and frequency. Electro mechanical protection relays are often used in larger scale power distribution applications. Rather than using a bimetallic strip of metal to open like in a traditional circuit breaker, an electro mechanical relay uses two electromagnetic coils, one to open the breaker contacts and one to close them. The protective relay monitors for the overload or fault condition, then energizes the open coil when a fault is detected.

Electro Motive Force: That force which determines the flow of electricity; a difference of electric potential.

Electro Positive: A substance which has a tendency to unite electrons in electrolysis leaving it with a positive charge.

Electrochemical: Pertaining to chemical reactions induced by an electric current, such as electrolysis or electroplating

electrochemical breakdown: In a practical insulation ions may arise from dissociation of impurities or from slight ionisations of the insulating material itself. When these ions reach the electrodes, reactions occur in accordance with Faraday's law of electrolysis, but on a much smaller scale. The products of the electrode reaction may be chemically or electrically harmful and in some cases can lead to rapid failure of the insulation.

Electrochemical Corrosion: Contact corrosion, Electrolytic corrosion, Galvanic corrosion) Localized corrosion from exposure of an assembly of dissimilar metals in contact or coupled with one another, i.e., electrochemical action.

Electrochemical process: The direct process end use in which electricity is used to cause a chemical transformation. Major uses of electrochemical process occur in the aluminum industry in which alumina is reduced to molten aluminum metal and oxygen, and in the alkalis and chlorine industry, in which brine is separated into caustic soda, chlorine, and hydrogen.

Electrode: Compressed graphite or carbon cylinder or rod used to conduct electric current in electric arc furnaces, arc lamps, carbon arc welding, etc.

Electrode: A conductor through which a current enters or leaves an eletrolytic cell, arc furnace, vacuum tube, gas discharge tube or other non-metallic conductor.

Electrodeposition: Application of a coating by immersing the parts in a bath of water containing resin, electrolytic stabilizers and pigments. An electric current is passed through the bath using the parts as anodes, plating them with resins and colors.

Electrodeposition: Electrolytic process in which a metal is deposited at the cathode from a solution of its ions.

electrodynamic: The interaction of magnetism and electrical current.

electrodynamometer: An instrument dependant on the interaction of the electromagnetic

fields of fixed and movable coils. It can measure current, voltage or power in both d.c. and a.c.

Electrogalvanized: Zinc plating process whereby the molecules on the positively charged zinc anode attach to the negatively charged sheet steel. The thickness of the zinc coating is readily controlled. By increasing the electric charge or slowing the speed of the steel through the plating area, the coating will thicken

Electrohydraulic Servo Valve: A servo valve which is capable of continuously controlling hydraulic output as a function of an electrical input.

Electrolier: A lampholder of the Edison base type, having a smaller outside diameter than those in general use.

electrolysis: Electric current passing through an electrolyte which produces chemical changes in it.

Electrolysis: The production of chemical changes by passage of current through an electrolyte.

Electrolysis : The separation of a chemical compound into its components by passing an electric current through it.

Electrolyte: A chemical solution used in cells and some capacitors to produce an electrically conductive medium.

electrolyte: An electrically conductive fused salt or a solution where the charge is carried by ionic movement.

Electrolyte: A liquid conductor of electricity.

Electrolyte (Battery): In a leadacid battery, the electrolyte is sulfuric acid diluted with water. It is a conductor and also a supplier of hydrogen and sulfate ions for the reaction.

Electrolyte (Battery): the chemical solution that ionized when dissolved in the solvent. H_2SO_4 is mostly used electrolyte in batteries.

Electrolytic capacitor: A capacitor whose dielectric is formed through the reaction of an electrolyte and its electrodes.

electrolytic capacitor (condenser): An electrical capacitor in which one electrode is a metal foil coated with a thin layer of the metal oxide, and the other electrode is a non-corrosive salt paste. The metal foil is maintained positive to prevent the removal of the oxide film by the hydrogen liberated.

Electrolytic Corrosion: Corrosion by means of electrochemical erosion.

Electrolytic Galvanized: Cold Rolled or Black Plate to which a coating of zinc is applied by electro deposition; used for applications in which corrosion resistance and paintability is a primary concern.

Electrolytic Tin Plate: (ETP) 1) Light gauge, low carbon, cold reduced steel on which tin has been electrodeposited. 2) Black plate coated with Tin Sn electron deposition.

Electrolytic Tough Pitch: A term describing the method of raw copper preparation to ensure a good physical and electrical grade copper finished product.

Electromagnet: A device that produces a magnetic field as the result of current flow through a coil of wire.

electromagnet: Temporary magnet formed by winding a coil of wire round a piece of soft iron, when an electric current flows through the wire, the iron becomes a magnet.

electromagnetic: Relating to a magnetic field created by an electric current.

Electromagnetic Clutches: A clutch is a mechanical device used to transmit force from one mechanism to another. Typically rotating, the clutch component is engaged by moving it into a contact position with the mechanism that is being driven. In an electromagnetic clutch, a magnetic field is created and used to pull the armature component into the rotor component. When the air gap between these two components is closed, the electromagnetic clutch is engaged and the rotation in the driven mechanism is started. The strength of the magnetic attraction and the friction between the two components then transmits torque through the clutch.

Electromagnetic compatibility (emc) (1). : The condition which prevails when telecommunications (communications-electronics) equipment is collectively performing its individually designed functions in a common electromagnetic environment without causing or suffering unacceptable degradation due to electromagnetic interference to or from other equipments/systems in the same environment.

Electromagnetic compatibility (emc) (2). : The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment. (nato)

Electromagnetic compatibility (emc). : The ability of systems, equipment, and devices that utilise the electromagnetic spectrum to operate in their intended operational environments without suffering unacceptable degradation or causing unintentional degradation because of electromagnetic radiation or response.

electromagnetic damping: Electromagnetic damping is produced by the induced effects when the coil moves in the magnetic field and a closed path is provided for the currents to flow.

Electromagnetic emission control (emcon). : See emission control (emcon).

electromagnetic field: Electric and magnetic force field that surrounds a moving electric charge.

Electromagnetic Interface (EMI): Electrical noise induced upon signal wires with the possible effect of obscuring the instrument signal.

Electromagnetic interference (emi). : Any electromagnetic disturbance which interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics/electrical equipments. It can be indeed intentionally, as in some forms of electronic warfare, or unintentionally as a result of spurious emission responses, intermodulation products and the like.

electromagnetic interference EMI: A term that describes electrically induced noise or transients, usually at frequencies above 1 MHz.

electromagnetic relay: A relay controlled by electromagnetic means, to open and close electric contacts.

Electromagnetic signature. : The electromagnetic energy radiated by personnel, equipment or vehicles that may provide a means of recognition and identification.

electromagnetic spectrum: The range of frequencies over which electromagnetic radiations are propagated.

electromagnetic spectrum. : The range of frequencies of electromagnetic radiation from zero to infinity.

Electromagnetic surveillance. : Electromagnetic search applied to some geographical area.

The surveillance is called exploratory when applied to an unknown or little-known environment. It is called verification surveillance when it aims to ensure that no new element has modified a given and known environment.

Electromechanical: A classification of actions or devices whereby a mechanical action is caused by the forces of attraction or repulsion created when current flow generates magnetic fields (electromagnetic).

Electro-Mechanical Protection Relays: A protection relay is a type of switch used in electrical circuits to monitor and protect against an overload or fault condition. The protection relay may operate by monitoring any type of electrical measurement, include current, voltage, and frequency. Electro-mechanical protection relays are often used in larger scale power distribution applications. Rather than using a bimetallic strip of metal to open like in a traditional circuit breaker, an electro-mechanical relay uses two electromagnetic coils, one to open the breaker contacts and one to close them. The protective relay monitors for the overload or fault condition, then energizes the open coil when a fault is detected.

Electromechanical Relay: An electrical relay in which the designed response is excited by a relative mechanical movement of elements under the action of a current in the input circuit.

Electromotive Force: Potential causing electricity to flow in a closed circuit.

Electromotive Force: the measurement of the maximum potential difference in charge between point in circuits is called EMF or voltage. It is measured in volts.

electromotive force emf: The source of electrical energy required to produce an electric current in a circuit. Defined as the rate at which electrical energy is drawn from the source and dissipated in a circuit when unit current is flowing in the circuit. [Unit volt or V]

Electromotive Force (emf) : The force or electrical pressure that has the potential to cause electron flow in a circuit. Also called voltage, potential difference or difference of potential. Measured in volts (V).

electron: An elementary particle having a negative charge and a constituent of all atoms. It has a rest mass of 9.1095×10^{-31} kg and a charge of 1.60219×10^{-19} C

electron affinity: The tendency of an atom or molecule to accept an electron and form a negative ion. The halogens have high electron affinities.

Electron Beam Microprobe Analyzer: An instrument for selective chemical analysis of a small volume of material. An electron beam bombards the area of interest and x radiation thereby emitted is analyzed in a spectrometer.

electron emission: The escape of electrons from certain materials.

electron gun: The source of electrons in a cathode ray tube. Consists of a cathode emitter of electrons, an anode with an aperture through which the beam of electrons can pass, and one or more focussing and control electrodes.

electron lens : A system of electric or magnetic fields used to focus a beam of electrons in a manner analogous to an optical lens.

Electron Microprobe Analyzer: An instrument for selective analysis of a microscopic area, in which an electron beam bombards the point of interest in Vacuo at a given energy level. Intensity of backscatter is measured to interpret which chemical elements are present, and by scanning a large area the microprobe can analyze chemical composition and indicate the distribution of an element.

electron volt: Unit of energy used in dealing with subatomic particles. It is the increase in

energy or the work done on an electron when passing through a potential rise of 1 volt. $1 \text{ eV} = 1.602 \times 10^{-19} \text{ J}$

Electron volt: An energy unit equal to the energy an electron acquires when it passes through a potential difference of one volt; it is equal to 1.602×10^{-19} volt.

electronic ballast: A ballast which uses semi-conductor components to increase the frequency and control the operation of a fluorescent lamp. Fluorescent system efficiency is increased due to the higher frequency.

Electronic camouflage. : The use of electronic means, or exploitation of electronic characteristics, to reduce, submerge or eliminate the radio echoing properties of a target.

Electronic countermeasures (ecm). : That division of electronic warfare involving actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, through the use of electromagnetic energy. There are three sub-divisions of ecm: electronic jamming, electronic deception and electronic neutralization.

Electronic countermeasures target list. : A compilation of enemy electromagnetically dependent surveillance, weapons control and communications devices which should be temporarily nullified by ecm actions in support of a commander's battle plans.

Electronic deception. : The deliberate radiation, re-radiation, alteration, absorption or reflection of electromagnetic energy in a manner intended to confuse, distract or seduce an enemy or his electronic systems.

Electronic emission security (ees). : Those measures taken to protect all transmissions from interception, direction finding and electronic analysis.

Electronic intelligence (elint). : Technical material and intelligence information derived from electromagnetic non-communications transmission (eg radar, navigational aids, jamming transmissions) by other than intended recipients.

Electronic jamming. : The deliberate radiation, re-radiation or reflection of electromagnetic energy, with the object of impairing the effectiveness of electronic devices, equipment or systems being used by an enemy.

Electronic mail. : Messages sent between subscribers electronically via a public or private data communications system.

electronic neutralization. : The deliberate use of electromagnetic energy to either temporarily or permanently damage enemy devices, which rely exclusively on the electromagnetic spectrum.

Electronic Overload Relays: An electronic overload relay is a type of switch used in electric motors to monitor and protect against a voltage or current overload condition. Rather than using a thermal overload trip, an electronic overload relay enables a trip circuit that shuts off power to the motor starter when an overload condition is detected.

Electronic protective measures (epm). : That division of electronic warfare involving actions taken to ensure friendly effective use of the electromagnetic spectrum despite the enemy's use of electromagnetic energy. There are two sub-divisions of epm: a) Active epm. Detectable measures, such as altering transmitter parameters as necessary, to ensure friendly effective use of the electromagnetic spectrum. b. Passive epm. Undetectable measures, such as operating procedures and technical features of equipment, which are meant to ensure friendly effective use of the electromagnetic spectrum.

Electronic search. : An investigation of the electromagnetic spectrum (or portions thereof), in order to determine the existence, sources and pertinent characteristics of electromagnetic radiation's.

Electronic security (elsec). : The protection resulting from all measures designed to deny to unauthorised persons information of value which might be derived from their interception and study of non-communications electromagnetic radiations, eg radar.

Electronic warfare (ew). : Military action involving the use of electromagnetic and directed energy to determine, exploit, reduce or prevent hostile use of, and retain friendly use of, the electromagnetic spectrum. Notes: 1. It is used to control the electromagnetic spectrum or to attack the enemy. 2. It includes electronic attack, electronic protection and electronic support.

Electronic warfare expendables. : Electronic warfare devices such as chaff, flares, nonrecoverable unmanned vehicles and decoys, and unattended jammers.

Electronic warfare support measures. : That division of electronic warfare involving actions taken to search for, intercept and identify electromagnetic emissions and locate their sources for the purpose of immediate threat recognition. It provides a source of information required for immediate decisions involving ecm, epm and other tactical actions.

Electronic. : A generic term to describe that branch of electrical science and technology which treats the behaviour of free electrons in vacuum or gaseous space and in semi-conductors and the circuitry associated therewith.

Electroplate: The term used to indicate the application of a metallic coating on a surface by means of electrolytic action.

Electroplating: The production of a thin coating of one metal on another by electrodeposition. It is very extensively used in industry and is continuing to enlarge its useful functions. Various plated metal and combinations thereof are being used for different purposes, to illustrate: 1. Decorative and protection against corrosioncopper, nickel and chromium . 2. Protection against corrosioncadmium or zinc 3. Protection against wearchromium . 4. Build up of a part or parts undersizechromium or nickel . 5. Pate for rubber adhesionbrass . 6. Protection against carburization and for brazing operationscopper and nickel

Electroslag Refining: A specialised steel making process in which a rolled or a cast ingot in the form of an electrode is remelted in a water cooled copper mould. The melting is activated by resistive heat generated in a conductive slag. The resulting product has a similar basic chemical composition to the original ingot, but is characterised by high purity and low inclusion content. Typical applications include high integrity components for the aerospace industry.

electrostatic: Relating to an electric field created by an electric charge.

Electrostatic field: An electric field produced by stationary charges.

electrostatic generator: A machine designed for the continuous separation of electric charge. An example is the Van de Graaf Generator.

electrostatic meter: These basically work on the principle that the force (or torque) of attraction is proportional to the product of the charges and the force is proportional to the square of the voltage. Thus this meter reads the mean square value and hence is calibrated to read the root mean square value. The electrostatic meter is basically a voltmeter.

Electrostatic Oiler: A device used to apply a thin coating of oil to the strip.

Electrostatic Spraying: Application of a coating by applying a static electricity charge to the droplets of a spray and an opposite charge to the part being sprayed, which then attracts the droplets directly to its surface.

Electro-Tinned: Electrolytic process of tinning wire using pure tin.

Element: A chemical substance that cannot be divided into simple substances by chemical means; atomic species with same number of protons.

Elevated Temperature Drawing: A process of drawing steel bars at elevated temperatures (normally 250-300°C) which under optimum conditions produce steels that have higher tensile and yield strengths than those cold drawn with the same degree of reduction. The process is little used in the United Kingdom.

Elevator Buckets: Elevator buckets are the transport buckets used in elevator lines to move bulk materials like grain or granular products. The buckets come in various sizes, shapes and material choices depending on the material being moved in the elevator line.

ellipsoid: A solid figure traced out by an ellipse rotating about one of its axes.

Elongation: Increase in length which occurs before a metal is fractured, when subjected to stress. This is usually expressed as a percentage of the original length and is a measure of the ductility of the metal.

Elongation: The amount (% length) that a conductor or other material can stretch before breaking when a pulling force is applied.

Elongation: elongation may be defined as the angle between the Sun and the planet taking the Earth as the reference point

Elongation After Fracture: In tensile testing, the increase in the gauge length measured after fracture of the specimen within the gauge length and usually expressed as a percentage of the original gauge length.

Elution: The process of using a solvent (eluent) to remove select ions (e.g., uranium) from an adsorbent such as ion-exchange resins.

Embedded Generation: Generation that is connected to a distribution system possibly at LV instead of HV.

embedded generation : (dispersed generation or distributed generation) Plant which is connected directly to (embedded within) the utility's distribution network rather than to the high voltage transmission system (or nation grid). They are generally considered to be less than 10-100 MW in capacity and are not centrally planned or dispatched.

embedded generator: A single generator, or a group of generators, connected to the distribution network of the CEB, at voltages between 400 V and 33 kV.

Embedded System: The programmable capability of computers hardware and software programmed for a particular application.

Embossed Aluminum: Flat rolled aluminum with a surface appearance that has a stucco or grained look.

Embossing: A means of marker identification by means of thermal indentation leaving raised lettering on the sheath material of cable.

Embrittlement: Loss of ductility of a metal due to chemical or physical change. See Acid Embrittlement and Hydrogen Embrittlement

Emc: Electromagnetic compatibility.

Emergency: The failure of an electric power system to generate or deliver electric power as

normally intended, resulting in the cut-off or curtailment of service.

Emergency backup generation: The use of electric generators only during interruptions of normal power supply.

Emergency energy: Electric energy provided for a limited duration, intended only for use during emergency conditions.

emergency lighting: Lighting provided for use when the supply to the normal lighting fails.

Emergency Overloads: Loads which occur when larger than normal currents are carried through a cable or wire over a certain period of time.

emergency power: An independent reserve source of electric power which, upon failure or outage of the normal power source, provides stand-by electric power.

Emergency Stack Damper: Set of two per boiler. An open damper allows exhaust to vent to the atmosphere rather than to the scrubber.

emergency stopping: Emergency switching intended to stop an operation.

emergency switching : An operation intended to remove, as quickly as possible, danger, which may have occurred unexpectedly.

emf: [see electromotive force]

Emi: Electromagnetic interference.

EMI: Electromagnetic interference or unwanted signal pick-up. One of two types of electrical "noise" caused by varying magnetic fields conducted into branch wiring from inductive load switching.

Emission control (emcon). : Measures to minimise the use of electronic emissions by friendly forces to reduce the risk of disclosure of the presence and composition of a force, whilst operating sufficient equipment to provide adequate warning for the threat situation.

Emission control policy (ep). : The policy which states what electromagnetic and acoustic emissions may be used.

emission security (emsec). : The component of comsec that results from all measures taken to deny unauthorised persons information that might be derived from interception and analysis of compromising emanations from crypto equipment, information processing equipment and telecommunications systems.

Emission, out-of band. : Emission on a frequency or frequencies immediately outside the necessary bandwidth that results from the modulation process, but excluding spurious emissions.

Emission, spurious. : Emission on a frequency or frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions.

Emissions: Anthropogenic releases of gases to the atmosphere. In the context of global climate change, they consist of radiatively important greenhouse gases (e.g., the release of carbon dioxide during fuel combustion).

Emissions coefficient: A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., pounds of carbon dioxide emitted per Btu of fossil fuel consumed).

emitter: The part of the transistor that is the source of carriers. For npn transistors, the

emitter sends free electrons into the base, whereas for pnp transistors, the emitter sends holes into the base.

Emitter: The portion or unit of a photoelectric sensor that contains a light source.

empirical: Based upon the results of experiment and observation only.

Empty slot ring. : (in lan technology) a ring lan in which a free packet circulates past (or, more precisely, through) every station; a bit in the packet's header indicates whether it contains any messages (if it contains messages, it also contains source and destination addresses).

EMS: See Energy Management System

EMTDC: ElectroMagnetic Transients for DC. Incorporates both EMTP and ATP, and integrates DC systems and components.

EMTP: Electromagnetic Transients Program

Emulation. : Computer representation of a real-time situation which is constrained to respond in a predicted manner.

Emulsion: A coolant formed by mixing soluble oils or compounds with water.

Enamel: Organic material, which is applied in a film to protect or decorate aluminum, tinplate, blackplate or paper.

Enameled Wire: A conductor with a baked-on varnish enamel.

Enclosed Cartridge Fuse: A fuse with a tubular body having a terminal on each end and a current-responsive element (link) inside.

Enclosed space: A working space, such as a manhole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic employee entry under normal operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions.

enclosure: The cabinet or specially designed box or fence or walls in which electrical controls and apparatus are housed, to prevent personnel from accidentally contacting energized parts or to protect the equipment from physical damage. A part providing protection of equipment against certain external influences and in any direction protection against direct contact.

Encode. : To convert data by the use of a code or a coded character set in such a manner that reconversion to the original form is possible. Note: the term is sometimes loosely used when complete reconversion is not possible.

Encoder: Device that converts linear or rotary displacement into digital or pulse signals.

encoder: A digital circuit that converts information into coded form.

Encoders: An encoder is any device or method used to translate information from one format to another. In the case of machinery systems, encoders are typically used to convert transducer signals measure position and orientation to a signal that is sent to a processed by a control system.

Encrypt.: To convert a plain text message into disguised form by means of a cryptosystem. The term "encrypt" covers the meanings of "encipher" and "encode."

End entity. : A certificate subject that uses its private key for purposes other than signing certificates or and entity that is a relying party.

End of transmission (eot) (1). : A standardised uninterrupted sequence of character and machine functions used to terminate a transmission and disconnect the circuit and transmitting

equipment.

End of transmission (eot)(2). : A prosign used in manual systems to signify the completion of a transmission ending.

End Point Voltage: Battery Voltage reached at the termination of a discharge. Also Known as the Cut Off Voltage.

End Point Voltage: Voltage is the end voltage under which equipment cannot be operated.

End user: A firm or individual that purchases products for its own consumption and not for resale (i.e., an ultimate consumer).

End-entity attribute certificate revocation list (earl). : A revocation list Containing a list of attribute certificates issued to holders, that are not also aas, that are no longer considered valid by the certificate issuer.

End-entity public-key certificate revocation list (epri). : A revocation list containing a list of public-key certificates issued to subjects that are not also cas, which are no longer considered valid by the certificate issuer.

Ending stocks: Primary stocks of crude oil and petroleum products held in storage as of 12 midnight on the last day of the month. Primary stocks include crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary Stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

End-of-Discharge Voltage: The voltage of a battery at the termination of a discharge but before the discharge is stopped.

Endothermic Reaction: The reaction which occurs with absorption of heat.

End-Point Voltage: The Cell or Battery voltage at which point the rated discharge capacity has been delivered at a specific RateofDischarge. It is also used to specify the cell or battery voltage below which the connected equipment will not operate or below which operati

Ends: In braiding, a term used to denote the number of wires or threads on a braider carrier.

Endurance Limit: Maximum alternating stress which a given material will withstand for an infinite number of times without causing fatigue failure. Same as fatigue limit

end-use : The specific purpose for which electric is consumed (i.e. heating, cooling, cooking, etc.).

Energized (alive, live): Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.

energized : Electrically connected to a source of voltage

Energy: The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units (Btu).

Energy: That which does work or is capable of doing work. Electricity is energy that is measured in kilowatt hours.

energy: Capacity to do work. [Unit joule or J] In the electric power industry, energy is more narrowly defined as electricity supplied over time, expressed in kilowatt-hours.

Energy: Energy is a property of objects which can be transferred to other objects or converted into different forms, but cannot be created or destroyed.

Energy: The capacity for doing work.

Energy assistance program: See Low Income Home Energy Assistance Program.

Energy audit: A program carried out by a utility company in which an auditor inspects a home and suggests ways energy can be saved.

energy audit: A review of the customer's electricity and/or gas usage often including recommendations to alter the customer's electric demand or reduce energy usage. An audit usually includes a visit to the customer's facility.

Energy audit: A survey that shows how much energy you use in your house or apartment. It will help you find ways to use less energy.

Energy broker system: Introduced into Florida by the Public Service Commission, the energy broker system is a system for exchanging information that allows utilities to efficiently exchange hourly quotations of prices at which each is willing to buy and sell electric energy. For the broker system to operate, utility systems must have in place bilateral agreements between all potential parties, must have transmission arrangements between all potential parties, and must have transmission arrangements that allow the exchanges to take place.

Energy charge: That portion of the charge for electric service based upon the electric energy (kWh) consumed or billed.

energy charge : The amount of money owed by an electric consumer for kilowatt-hours consumed.

Energy conservation features: This includes building shell conservation features, HVAC conservation features, lighting conservation features, any conservation features, and other conservation features incorporated by the building. However, this category does not include any demand-side management (DSM) program participation by the building. Any DSM program participation is included in the DSM Programs.

Energy consumption: The use of energy as a source of heat or power or as a raw material input to a manufacturing process.

energy consumption : The amount of energy consumed in the form in which it is acquired by the user. The term excludes electrical generation and distribution losses outside his point of entry of supply.

Energy contribution potential: Recombination occurring in the emitter region of a photovoltaic cell.

energy costs : Costs, such as for fuel, that are related to and vary with energy production or consumption.

Energy deliveries: Energy generated by one electric utility system and delivered to another system through one or more transmission lines.

Energy demand: The requirement for energy as an input to provide products and/or services.

Energy density: The ratio of energy available from a battery to its volume (Wh/1) or mass

(Wh/kg).

Energy effects: The changes in aggregate electricity use (measured in megawatthours) for consumers that participate in a utility DSM (demand-side management) program. Energy effects represent changes at the consumer's meter (i.e., exclude transmission and distribution effects) and reflect only activities that are undertaken specifically in response to utility-administered programs, including those activities implemented by third parties under contract to the utility. To the extent possible, Energy effects should exclude non-program related effects such as changes in energy usage attributable to non participants, government-mandated energy-efficiency standards that legislate improvements in building and appliance energy usage, changes in consumer behavior that result in greater energy use after initiation in a DSM program, the natural operations of the marketplace, and weather and business-cycle adjustments.

Energy Efficiency: A ratio of service provided to energy input (e.g., lumens to watts in the case of light bulbs). Services provided can include buildings-sector end uses such as lighting, refrigeration, and heating industrial processes; or vehicle transportation. Unlike conservation, which involves some reduction of service, energy efficiency provides energy reductions without sacrifice of service. May also refer to the use of technology to reduce the energy needed for a given purpose or service.

energy efficiency programs : Programs that reduce consumption.

Energy efficiency, Electricity: Refers to programs that are aimed at reducing the energy used by specific end-use devices and systems, typically without affecting the services provided. These programs reduce overall electricity consumption (reported in megawatthours), often without explicit consideration for the timing of program-induced savings. Such savings are generally achieved by substituting technologically more advanced equipment to produce the same level of end-use services (e.g. lighting, heating, motor drive) with less electricity. Examples include high-efficiency appliances, efficient lighting programs, high-efficiency heating, ventilating and air conditioning (HVAC) systems or control modifications, efficient building design, advanced electric motor drives, and heat recovery systems.

Energy efficient motors: Are also known as "high-efficiency motors" and "premium motors." They are virtually interchangeable with standard motors, but differences in construction make them more energy efficient.

Energy exchange: Any transaction in which quantities of energy are received or given up in return for similar energy products. See exchange, electricity;exchange, petroleum; and exchange, natural gas.

Energy expenditures: The money directly spent by consumers to purchase energy. Expenditures equal the amount of energy used by the consumer multiplied by the price per unit paid by the consumer.

Energy Harvesting: the process of getting Energy from other sources like wind and Sun and using that into portable electronic devices after storing

Energy information: Includes (A) all information in whatever form on fuel reserves, extraction, and energy resources (including petrochemical feedstocks) wherever located; production, distribution, and consumption of energy and fuels wherever carried on; and (B) matters relating to energy and fuels, such as corporate structure and proprietary relationships, costs, prices, capital investment, and assets, and other matters directly related there to,

wherever they exist.

Energy Information Administration (EIA): An independent agency within the U.S. Department of Energy that develops surveys, collects energy data, and does analytical and modeling analyses of energy issues. The Agency must satisfy the requests of Congress, other elements within the Department of Energy, Federal Energy Regulatory Commission, the Executive Branch, its own independent needs, and assist the general public, or other interest groups, without taking a policy position.

Energy Intensity: A ratio of energy consumption to another metric, typically national gross domestic product in the case of a country's energy intensity. Sector-specific intensities may refer to energy consumption per household, per unit of commercial floorspace, per dollar value industrial shipment, or another metric indicative of a sector. Improvements in energy intensity include energy efficiency and conservation as well as structural factors not related to technology or behavior.

Energy intensity (Commercial Buildings Energy Consumption Survey): The ratio of consumption to floor space.

Energy isolating device: A physical device that prevents the transmission or release of energy, including, but not limited to, the following a manually operated electric circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, a line valve, blocks, and any similar device with a visible indication of the position of the device. (Push buttons, selector switches, and other control-circuit-type devices are not energy isolating devices.)

Energy levels: The energy represented by an electron in the band model of a substance.

Energy loss: Deleted because there is no need for a general term to encompass all forms of energy loss. Terms referring to losses specific to particular energy sources are defined separately.

Energy loss (power): See Power loss.

Energy management and control system(EMCS): An energy conservation feature that uses mini/microcomputers, instrumentation, control equipment, and software to manage a building's use of energy for heating, ventilation, air conditioning, lighting, and/or business-related processes. These systems can also manage fire control, safety, and security. Not included as EMCS are time-clock thermostats.

Energy management practices: Involvement, as a part of the building's normal operations, in energy efficiency programs that are designed to reduce the energy used by specific end-use systems. This includes the following EMCS, DSM Program Participation, Energy Audit, and a Building Energy Manager.

Energy Management System: A system in which a dispatcher can monitor and control the flow of electric power by opening and closing switches to route electricity or to isolate a part of the system for maintenance. It is also used to control the amount of generation needed to serve

energy meter: Instrument to measure energy, usually a house service meter.

Energy Policy Act of 1992 (EPACT): This legislation creates a new class of power generators, exempt wholesale generators, that are exempt from the provisions of the Public Holding Company Act of 1935 and grants the authority to the Federal Energy Regulatory Commission to order and condition access by eligible parties to the interconnected

transmission grid.

Energy production: See production terms associated with specific energy types.

Energy receipts: Energy brought into a site from another location.

Energy reserves: Estimated quantities of energy sources that are demonstrated to exist with reasonable certainty on the basis of geologic and engineering data (proved reserves) or that can reasonably be expected to exist on the basis of geologic evidence that supports projections from proved reserves (probable/indicated reserves). Knowledge of the location, quantity, and grade of probable/indicated reserves is generally incomplete or much less certain than it is for proved energy reserves. Note This term is equivalent to "Demonstrated Reserves" as defined in the resource/reserve classification contained in the U.S. Geological Survey Circular 831,1980. Demonstrated reserves include measured and indicated reserves but exclude inferred reserves.

Energy sale(s): The transfer of title to an energy commodity from a seller to a buyer for a price or the quantity transferred during a specified period.

Energy savings: A reduction in the amount of electricity used by end users as a result of participation in energy efficiency programs and load management programs.

Energy service provider: An energy entity that provides service to a retail or end-use customer.

Energy source: Any substance or natural phenomenon that can be consumed or transformed to supply heat or power. Examples include petroleum, coal, natural gas, nuclear, biomass, electricity, wind, sunlight, geothermal, water movement, and hydrogen in fuel cells.

Energy source: Any electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, or other energy source that could cause injury to personnel.

energy source : A source that provides the power to be converted to electricity.

Energy supplier: Fuel companies supplying electricity, natural gas, fuel oil, kerosene, or LPG (liquefied petroleum gas) to the household.

Energy supply: Energy made available for future disposition. Supply can be considered and measured from the point of view of the energy provider or the receiver.

energy use : Energy consumed during a specified time period for a specific purpose (usually expressed in kWh).

Energy used in the home: For electricity or natural gas, the quantity is the amount used by the household during the 365- or 366-day period. For fuel oil, kerosene, and liquefied petroleum gas (LPG), the quantity consists of fuel purchased, not fuel consumed. If the level of fuel in the storage tank was the same at the beginning and end of the annual period, then the quantity consumed would be the same as the quantity purchased.

Energy-use sectors: A group of major energy-consuming components of U.S. society developed to measure and analyze energy use. The sectors most commonly referred to in EIA are residential, commercial, industrial, transportation, and electric power.

Energy-weighted industrial output: The weighted sum of real output for all two-digit Standard Industrial Classification(SIC) manufacturing industries plus agriculture, construction, and mining. The weight for each industry is the ratio between the quantity of end-use energy consumption to the value of real output.

engine: A device for converting one form of energy into another, especially for converting other forms of energy into mechanical (kinetic) energy.

Engine size: The total volume within all cylinders of an engine when pistons are at their lowest positions. The engine is usually measured in "liters" or "cubic inches of displacement (CID)." Generally, larger engines result in greater engine power, but less fuel efficiency. There are 61.024 cubic inches in a liter.

Engineering Analysis: Engineering analysis is the act of using sound engineering and scientific principles and procedures for the purpose of analyzing a systems condition or performance.

Engineering Design: Engineering design is the act of using sound engineering and scientific principles and procedures for the purpose of design individual components or an entire system. Engineering design is often associated with the creation of dimensioned engineering drawings and models for the purpose of production.

Engineering Stress (S): The load divided by the original area.

Enq, enquiry. : A control character (control e in ascii) used as a request to obtain identification or status.

Enq/ack protocol. : A hewlett-packard communications protocol. The hp3000 computer follows each transmission block with enq to determine if the destination terminal is ready to receive more data; the destination terminal indicates its readiness by responding with ack.

Enriched uranium: Uranium in which the U-235 isotope concentration has been increased to greater than the 0.711 percent U-235 (by weight) present in natural uranium.

Enriched uranium: Uranium in which the proportion of U-235 (to U-238) has been increased above the natural 0.7%. Reactor-grade uranium is usually enriched to about 3.5% U-235, weapons-grade uranium is more than 90% U-235.

Enrichment: Physical process of increasing the proportion of U-235 to U-238.

Enrichment feed deliveries: Uranium that is shipped under contract to a supplier of enrichment services for use in preparing enriched uranium product to a specified U-235 concentration and that ultimately will be used as fuel in a nuclear reactor.

Enrichment tails assay: A measure of the amount of fissile uranium (U-235) remaining in the waste stream from the uranium enrichment process. The natural uranium "feed" that enters the enrichment process generally contains 0.711 percent (by weight) U-235. The "product stream" contains enriched uranium (more than 0.711 percent U-235) and the "waste" or "tails" stream contains depleted uranium (less than 0.711 percent U-235). At the historical enrichment tails assay of 0.2 percent, the waste stream would contain 0.2 percent U-235. A higher enrichment tails assay requires more uranium feed (thus permitting natural uranium stockpiles to be decreased), while increasing the output of enriched material for the same energy expenditure.

Entrainment (Battery): The process whereby gasses generated in the cell carry electrolyte through the vent cap.

entrance cable/service entrance conductor : Cable running outside of a consumer's house into the meter. This cable is owned by the consumer and its maintenance is the consumer's responsibility.

Environment: All the natural and living things around us. The earth, air, weather, plants, and animals all make up our environment.

environmental attributes : Environmental attributes quantify the impact of various options on the environment. These attributes include particulate emissions, SO₂ or NO_x, and thermal discharge (air and water).

Environmental impact statement: A report that documents the information required to evaluate the environmental impact of a project. It informs decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the environment.

Environmental protection agency (EPA) certification files: Computer files produced by EPA for analysis purposes. For each vehicle make, model and year, the files contain the EPA test MPGs (city, highway, and 55/45 composite). These MPG's are associated with various combinations of engine and drive-train technologies (e.g., number of cylinders, engine size, gasoline or diesel fuel, and automatic or manual transmission). These files also contain information similar to that in the DOE/EPA Gas Mileage Guide, although the MPGs in that publication are adjusted for shortfall.

Environmental restoration: Although usually described as "cleanup," this function encompasses a wide range of activities, such as stabilizing contaminated soil; treating groundwater; decommissioning process buildings, nuclear reactors, chemical separations plants, and many other facilities; and exhuming sludge and buried drums of waste.

Environmental restrictions: In reference to coal accessibility, land-use restrictions that constrain, postpone, or prohibit mining in order to protect environmental resources of an area; for example, surface- or ground water quality, air quality affected by mining, or plants or animals or their habitats.

Environmental variables. : Those aspects of policy required for an authorisation decision that are not contained within static structures, but are available through some local means to a privilege verifier (e.g. Time of day or current account balance).

EO: Elevator lighting and control cable. Rubber insulation, cotton braid, neoprene jacket. May have steel supporting strand in center, 300V.

Eomf, end of message functions. : See indicator, end of message.

EOR: Enhanced Oil Recovery

Eow. : Engineering order wire. An exclusive circuit for use by operations or maintenance personnel. See also circuit, engineering.

EP, EPR, EPM, EPDM: Designations for synthetic rubber based upon ethylene-propylene hydrocarbon.

EPA: Environmental Protection Agency

EPA certification: A permanent label on fireplace inserts and freestanding wood stoves manufactured after July 1, 1988, indicating that the equipment meets EPA standards for clean burning.

EPA composite MPG: The harmonic mean of the EPA city and highway MPG (miles per gallon), weighted under the assumption of 55 percent city driving and 45 percent highway driving.

EPACT: Energy Policy Act of 1992

EPDM: Ethylene Propylene Dione Monimer. This is a synthetic rubber compound used as insulation in making electrical components.

Ephemeris. : A table indicating the daily positions of selected celestial bodies, together with other astronomical data.

Epitaxial growth: The growth of one crystal on the surface of another crystal. The growth of the deposited crystal is oriented by the lattice structure of the original crystal.

Epitaxy: Induced orientation of the lattice of a crystal of a surface deposit by the lattice of the substrate crystal.

Epoxy Amino: Clear thermosetting coating with a combination epoxy resin and amino resin to give adhesion, flexibility and toughness. They offer good chemical and solvent resistance.

Epoxy Concrete Repair: Epoxy concrete repair makes use of a two-component compound created by the combination of a polymer resin with an organic compound that acts as a hardener. When mixed, the constitutive elements of the two compounds form a strong and rigid covalent bond. The resulting compound can be used to fill and seal cracks and small holes in concrete.

Epoxy Phenolic: Physical blends of epoxy and phenolic resins. Good thermosetting coating with a combination of epoxy resin and amino resin to give adhesion, flexibility and toughness. They offer good chemical and solvent resistance.

EPR: Ethylene Propylene Rubber, a synthetic rubber compound that is used as cable insulation.

EPRI: Electric Power Research Institute. EPRI is located at P.O. Box 10412, Palo Alto, CA 94303.

EPROM: Electrically Programmable Read Only Memory.

EPROM: Erasable programmable read only memory.

Eprom, erasable programmable read-only memory. : A non-volatile semi conductor prom that can have its current contents cleared (usually through exposure to ultraviolet light - but see eeprom) and then accept new contents for storage.

Equilibrium Diagram: A graphical representation of the temperature, pressure and composition limits of phase fields in an alloy system as they exist under conditions of thermodynamical equilibrium. In condensed systems, pressure is usually considered constant.

Equalization.: The process of compensating for line distortions.

Equalizer. : A device used by modems to compensate for distortions caused by telephone line conditions.

Equiaxed Crystals: Crystals, each of which has axes approximately equal in length. These are normally present in centre of a steel ingot.

Equiaxed Structure: A structure in which the grains have approximately the same dimensions in all directions.

equilateral: Having all the sides equal in length. Equilateral triangle is one which has all three sides equal.

Equilibrium: A dynamic condition of balance between atomic movements, where the resultant is zero and the condition appears to be one of rest rather than change.

equilibrium: State of balance between opposing forces or effects.

Equilibrium cycle: An analytical term that refers to fuel cycles that occur after the initial one or two cycles of a reactor's operation. For a given type of reactor, equilibrium cycles have similar fuel characteristics.

Equipment Room (ER): A centralized space for telecommunications equipment serving one or multiple buildings. It contains more complex equipment than the telecommunications closet, which serves each floor of a building.

equipment : A general term including material, fittings, devices, appliances, luminaires (fixtures), apparatus, and the like used as a part of, or in connection with, an electrical

installation.

Equipment, terminal. : Communications equipment in place at each end of a circuit to permit the stations involved to accomplish the mission for which the circuit was established.

equipotential bonding: Electrical connection maintaining various exposed conductive parts and extraneous conductive parts at substantially the same potential.

equipotential lines and surfaces: Lines and surfaces having the same electric potential.

Equipotential zone: A zone of equal potential used to protect workers from hazardous step and touch potentials.

Equity (financial): Ownership of shareholders in a corporation represented by stock.

Equity capital: The sum of capital from retained earnings and the issuance of stock.

Equity crude oil: The proportion of production that a concession owner has the legal and contractual right to retain.

Equity in earnings of unconsolidated affiliates: A company's proportional share (based on ownership) of the net earnings or losses of an unconsolidated affiliate.

erg: Unit of work or energy in the c.g.s. system of units. $1 \text{ erg} = 10^{-7} \text{ J}$

Ergonomics: The science which deals with the interaction between people, their work place and environment. It also considers the physiology of workers in the design of tools, equipment, and the work methods needed.

Erichsen Test: A cupping test in which a piece of sheet metal, restrained except at the center, is deformed by a cone shaped spherical end plunger until fracture occurs. The height of the cup in millimeters at fracture is a measure of the ductility.

erosion: In a surface discharge, if the products of decomposition are volatile and there is no residual conducting carbon on the surface, the process is simply one of pitting and is known as erosion. Erosion occurs in organic materials.

Error: The difference between the correct or desired value and the actual read or value taken.

error: An error is a deviation from the true value of the measured variable.

Error: The difference between the value indicated by the transducer response curve contains points of equal maximum value.

Error control. : An arrangement that combines error detection and error correction.

Error controller. : A device that provides error control, usually installed in pairs between the modem and dte at each end of a data link.

Error correction. : An arrangement that restores data integrity in received data, either by manipulating the received data or by requesting retransmission from the source (see arg).

Error detection. : An arrangement that senses flaws in received data by examining parity bits, verifying block check characters, or using other techniques.

Error detection. : Error control making use of an appropriate code by which the presence of mutilation can be discovered at reception.

error rate. : A measure of data integrity, given as the fraction of bits which are flawed. Often expressed as a negative power of 10 - as in 10^{-6} (a rate of one error in every one million bits).

ERW: Electric resistance weld ? most common form of manufacturing for pipe in sizes from 2 3/8 22? OD

Essential facilities. : (in packet-switched networks) standard network facilities, which are on all networks. Contrast with additional facilities.

Establishment: An economic unit, generally, at a single physical location where business is conducted or where services or industrial operations are performed. However, "establishment" is not synonymous with "building."

Estimated additional resources (EAR): Uranium in addition to that is expected to occur, mostly on the basis of geological evidence, in extensions of well-explored deposits, in little-explored deposits, and in undiscovered deposits believed to exist along well-defined geological trends with known deposits. This uranium can subsequently be recovered within the given cost ranges. Estimates of tonnage and grade are based on available sampling data and on knowledge of the deposit characteristics, as determined in the best-known parts of the deposit or in similar deposits. Note corresponds to DOE's probable potential resources category.

Estimated additional resources (EAR): The uranium in addition to reasonable assured resources (RAR) that is expected to occur, mostly on the basis of direct geological evidence, in extensions of well-explored deposits, little-explored deposits, and undiscovered deposits believed to exist along a well-defined geologic trend with known deposits, such that the uranium can subsequently be recovered within the given cost ranges. Estimates of tonnage and grade are based on available sampling data and on knowledge of the deposit characteristics as determined in the best known parts of the deposit or in similar deposits. EAR correspond to DOE's Probable Potential Resource Category.

Estimated Recoverable Reserves (coal): An estimate of coal reserves, based on a demonstrated reserve base, adjusted for assumed accessibility and recovery factors, and does not include any specific economic feasibility criteria.

ET: Elevator lighting and control cable. Polyvinyl chloride insulation, three braids, flame-retardant and moisture-retardant finish. May have steel supporting strand in center, 300V.

ETBE: ethyl tertiary butyl ether

ETBE (ethyl tertiary butyl ether): $(\text{CH}_3)_3\text{COC}_2\text{H}$ An oxygenate blend stock formed by the catalytic etherification of isobutylene with ethanol.

Etchant: A chemical solution used to etch a metal to reveal structural details.

Etching: Subjecting the surface of a metal to preferential chemical or electrolytic attack to reveal structural details.

ETCS: Electrolytic Tin Coated Sheets.

Ethane : 26A straight-chain saturated (paraffinic) hydrocarbon extracted predominantly from the natural gas stream, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -127 degrees Fahrenheit.

Ethanol: 25A clear, colorless, flammable alcohol. Ethanol is typically produced biologically from biomass feedstocks such as agricultural crops and cellulosic residues from agricultural crops or wood. Ethanol can also be produced chemically from ethylene. See Biomass, Fuel Ethanol, and Fuel Ethanol Minus Denaturant.

Ether: A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Ethernet: The LAN card hardware with base band developed jointly by DEC's Xerox and Intel to interconnect computers for data and information transfer. It uses co-axial cable and transceivers.

Ethernet: The most commonly used network protocol.

Ethernet Adaptor: An ethernet adaptor is a piece of computer equipment used to enable a piece of hardware or a computer system to communicate with other components over a computer network. This network is most often an ethernet-type network with well-established protocols. All components on the ethernet network are identified by their Media Access Control (MAC) address, a 48-bit serial number unique to the network component.

Ethernet Cable: An ethernet cable is a specialized computer cable designed to connect to ethernet adapters and carry ethernet signals over a computer network. Ethernet cables can be constructed of coaxial cable, twisted-pair conductors, or fiber optic cable and the throughput speeds capable are dependent on the type of cable, the connector type, and the cable length.

Ethernet. : (in lan technology) a defacto standard, developed first by xerox and then sponsored by xerox, intel, and dec. An ethernet lan uses coaxial cables and csma/cd. Ethernet is similar to an ieee 802.3 lan (they can share the same cable and communicate with each other).

Ethylene : 24An olefinic hydrocarbon recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Ethylene is used as a petrochemical feedstock for many chemical applications and the production of consumer goods.

Ethylene dichloride: A colorless, oily liquid used as a solvent and fumigant for organic synthesis, and for ore flotation.

ETP: Electrolytic Tin Plate.

Etsi. : The european telecommunications standards institute (etsi) is an autonomous body with cept and was formed to undertake the standards writing activities of cept. The membership of etsi is open and there are currently 135 member organisations including national administrations, public network operators, manufacturers, users and research bodies.

EtX, end of text. : A control character used to indicate the conclusion of a message; it immediately precedes the block check character (bcc) in transmission blocks.

EU: European Union

EUE: External upset ends ? forging of ends on (API) tubing and pipe to provide additional thickness for strengthening connections

Eurasia: The physical land mass containing the continents of Europe and Asia. For Energy Information Administration reporting, it includes the former parts of the Union of Soviet Socialist Republics Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Eutectic: An alloy used to form the melting point of a fuse. It is frequently silver or tin based.

Eutectic : 1) An isothermal reversible reaction in which a liquid solution decomposes, on cooling, into two or more intimately mixed solids. The number of solids formed are the same number of components in the system. 2) An alloy having the chemical composition indicated by the eutectic point on a equilibrium diagram.

Eutectoid: 1) An isothermal reversible reaction in which a solid solution on cooling is converted into two or more intimately mixed solids. The number of solids formed are the same number of components in the system. 2) An alloy having the same chemical composition indicated by the eutectoid point on a equilibrium diagram.

Eutectoid Steel: Steel representing the eutectoid composition of the iron carbon system, with about 0.80% to 0.83% carbon, the eutectoid temperature being about 1333 (degrees) F. Such

steel in the annealed condition consists exclusively of pearlite. Steels with less than this quota of carbon are known as hypo eutectoid and contain free ferrite in addition to the pearlite. When more carbon is present, the steel is known as hyper eutectoid and contains free cementite. The presence of certain elements, such as nickel or chromium, lowers the eutectoid carbon content.

Evacuated-tube collector: A collector in which solar thermal heat is captured by use of a collector fluid that flows through an absorber tube contained inside an evacuated glass tube.

evaporation: Conversion of a liquid into vapour, without necessarily reaching the boiling point.

Evaporation pond: A containment pond (that preferably has an impermeable lining of clay or synthetic material such as hypalon) to hold liquid wastes and to concentrate the waste through evaporation.

Evaporative cooler (swamp cooler): An air-cooling unit that turns air into moist, cool air by saturating the air with water vapor. It does not cool air by use of a refrigeration unit.

Evaporative Cooling Systems: An evaporative cooling system utilizes the evaporation of water to cool air in an environment. Evaporative cooling systems are especially useful in environments where the air temperature is hot and the humidity is low. During the process, latent heat is extracted from the surrounding air in order to trigger the evaporative process. The result is that the surrounding air and components are cooled by the evaporation.

Evasion.: In electronic warfare, tactics that are designed to take advantage of the limitations of radar to prevent or postpone radar detection, or to avoid revealing the true position of an attacking force.

even symmetry or even function: A function has even symmetry when its plot is symmetrical about the vertical axis. $f(t) = f(-t)$

Event: In the digital world an event is any information acquired or produced by the digital control system.

Event Data Recorder: An event data recorder is a monitoring instrument used in automobiles, aircraft, or other machinery systems to record fault conditions as they occur. During maintenance periods or failure investigations, the event data recorder can be analyzed to determine the state of system components in an effort to piece together a timeline of the system performance.

Ewcp. : Ew control panel. Aim to improve the survivability of a platform by more accurate and timely deployment of softkill countermeasures and by generally improving the ew contribution to aww.

EWG : Exempt Wholesale Generator

exa (E): Decimal multiple prefix corresponding to 10¹⁸

exbi (Ei): Binary multiple prefix corresponding to gigabinary or 2⁶⁰ or (2¹⁰)⁶ or 1024⁶. [IEC 1998]

Excess Base: (E.B.) A chemical analysis that indicates the percent of basic over acid of the sinter.

Excess Gain Ratio: Maximum light available at a given distance. Level of light intensity needed to operate the photoelectric sensor.

Excess statutory depletion: The excess of estimated statutory depletion allowable as an income tax deduction over the amount of cost depletion otherwise allowable as a tax

deduction, determined on a total enterprise basis.

Exchange: See energy exchange.

Exchange (1). : A room or building equipped so that the telephone lines terminating there may be interconnected as required. The equipment may include a switchboard or automatic switching apparatus.

Exchange (2).: A unit established by a common carrier for the administration of communications services in a specified geographical area such as a city. It consists of one or more central offices together with the equipment used in providing the communications services. Frequently used as a synonym for central office.

Exchange agreement: A contractual agreement in which quantities of crude oil, petroleum products, natural gas, or electricity are delivered, either directly or through intermediaries, from one company to another company, in exchange for the delivery by the second company to the first company of an equivalent volume or heat content. The exchange may take place at the same time and location or at different times and/or locations. Such agreements may also involve the payment of cash. Note EIA excludes volumes sold through exchange agreements to avoid double counting of data. See energy exchange.

Exchange energy: See exchange, electricity.

Exchange, automatic. : An exchange at which communication between subscribers is effected without the intervention of an operator, by means of switches set in motion by the operation of a dial on the originating subscriber's instrument.

Exchange, central battery or common battery (cb). : A manual exchange that Provides, from a battery situated at the exchange, the current needed for operating supervisory signals and subscribers' calling signals and also the current required to enable the subscriber to speak over his line. Also known as common battery exchange.

Exchange, electricity: A type of energy exchange in which one electric utility agrees to supply electricity to another. Electricity received is returned in kind at a later time or is accumulated as an energy balance until the end of a specified period, after which settlement may be made by monetary payment. This term is also referred to as exchange energy.

Exchange, magneto switchboard. : See switchboard, magneto.

Exchange, manual (telephone). : A telephone exchange providing only manual telephone operation.

Exchange, natural gas: A type of energy exchange in which one company agrees to deliver gas, either directly or through intermediaries, to another company at one location or in one time period in exchange for the delivery by the second company to the first company of an equivalent volume or heat content at a different location or time period. Note Such agreements may or may not include the payment of fees in dollar or volumetric amounts.

Exchange, petroleum: A type of energy exchange in which quantities of crude oil or any petroleum product(s) are received or given up in return for other crude oil or petroleum products. It includes reciprocal sales and purchases.

Exchange, power: Delete in favor of the already-defined term exchange energy, which should be renamed exchange electricity or exchange, electricity.

Exchange, private branch (pbx). : A switchboard, or automatic apparatus, installed at a headquarters or establishment to provide facilities for making outside calls and for intercommunication for all subscribers at the headquarters or establishment.

exchange, telecommunication. : See switching entity.

Exchange, trunk. : An exchange (manual or automatic), the principal function of which is to control the switching of trunk traffic.

excitation: The addition of energy to a nucleus, an atom or a molecule transferring it from its ground state to a higher energy level. The excitation is the difference in energy between the ground state and the excited state.

Excitation Voltage: The external application of an electrical voltage source applied to a transducer for normal operation.

Exciter: The part of the generator that produces the DC current that is required to make an Electromagnet out of the rotating part (called the rotor) of the generator.

Exciting Current: The magnetizing current of a device such as a transformer. Also known as a field current.

Exciting Current: The current or amperes required getting the transformer to the point where it will operate. A certain amount of energy is required to overcome the internal resistance of the steel core. The exciting current on most transformers varies from approximately 10% on small sizes of about 1 KVA and smaller to approximately.

Executive method. : The method by which the transmitting station directs the addressees of a message to execute (take action on) its purport at a given moment.

Executive signal. : The transmission, which indicates the instant at which messages are to be executed.

Exempt wholesale generator (EWG): Wholesale generators created under the 1992 Energy Policy Act that are exempt from certain financial and legal restrictions stipulated in the Public Utilities Holding Company Act of 1935.

Exercise, communications. : Any transmission or reception of information directed specifically to evaluate the efficiency of communications facilities, procedures and training.

Exfiltration: A type of corrosion that progresses approximately parallel to the outer surface of the metal, causing layers of the metal to be elevated by the formation of corrosion product.

Exhaust Ducting: Exhaust ducting refers to the piping or ductwork connected to the exit of a mechanical system, usually directing the exhaust to an external environment.

Exhaust fan: Small fans located in the wall or ceiling that exhaust air, odors, and moisture from the bathroom, kitchen, or basement to the outside.

Exhaust Line: A passage that is open to atmosphere. Normally used in systems using pressurized air or gas, which may be dispersed into the atmosphere.

Exhaust Steam: Steam that is exhausted from a turbine. This steam is reduced in pressure and temperature as it exits the turbine and is returned to the plant for heating and various feed water treatment needs. Normal exhaust steam pressure is 2 to 3 psi and the temperature averages 225 degrees Fahrenheit.

Exit End: The delivery end of the line.

Exit Reel: (Delivery Reel or Prime Reel) Reel used to wind the strip after the side trimming process.

Exothermic: Formed by or characterized by heat reaction as in oxidation.

Exothermic: Characterized by the liberation of heat.

Exothermic Reaction: Chemical reactions involving the liberation of heat. See Endothermic Reaction.

Exothermic Welding Flux: Exothermic welding is a special form of welding that uses a chemical reaction to join two electrical conductors without the need for an external heat source. An exothermic welding flux is used with the welding chemicals to create a rapid chemical reaction that locally superheats the conductors and bonds them together.

Expanded Mesh: An expanded mesh product is one which a metal is processed using slitting, rolling, or stretching techniques to create a strong, single-piece mesh with a high strength-to-weight ratio. Expanded meshes are often used to create barriers or fences in order to enclose, protect, support, or filter an environment. Expanded meshes can be constructed of many different metals, including aluminum, copper, titanium, steel and steel alloys.

Expander Steel: Hardened and tempered, blue polished. Carbon content about 1.00, Chromium .17. Used for the expanders in oil piston rings. Hardness 30 N 70 to 73. Range of sizes run for grooves 3/32 to 1/4 wide with the steel approximately .003 less than the grooves and thickness from .012 to .020.

Expander. : A device that reverses the effect of analogue compression. See also compandor.

Expansion Joint Bellows: An expansion joint is a gap or clearance or specialized joint designed to allow for the expansion and contraction of materials due to temperature changes, vibration, or other external influences. The bellows is the component of the expansion joint that provides the flexibility in the joint to account for the external factors. There are many types of expansion joints, and therefore, many different bellows designs.

Expansion Tank : A component of the cooling system that keeps the coolant volume constant.

expendable jammer. : An electronic jamming transmitter normally designed for one-time and unattended operation, to be placed in the vicinity of enemies radio or radar receiving antenna through clandestine, airdropped or other means.

Expenditure: The incurrance of a liability to obtain an asset or service.

Expenditures per million Btu: The aggregate ratio of a group of buildings' total expenditures for a given fuel to the total consumption of that fuel.

Expenditures per square foot: The aggregate ratio of a group of buildings' total expenditures for a given fuel to the total floor space in those buildings.

Explicit access. : (in lan technology) a shared access method that allows stations to use the transmission medium individually for a specific time period; every station is guaranteed a turn, but every station must also wait for its turn. Contrast with contended access.

Exploration drilling: Drilling done in search of new mineral deposits, on extensions of known ore deposits, or at the location of a discovery up to the time when the company decides that sufficient ore reserves are present to justify commercial exploration. Assessment drilling is reported as exploration drilling.

Exploratory well: A hole drilled a) to find and produce oil or gas in an area previously considered unproductive area; b) to find a new reservoir in a known field, i.e., one previously producing oil and gas from another reservoir, or c) to extend the limit of a known oil or gas reservoir.

Explosion proof: Designed and constructed to withstand and internal explosion without creating an external explosion or fire.

Explosion Proof: A connector so constructed as to meet the requirements of hazardous (classified) locations as defined by the NEC, NFPA-70

exponent: The number indicating the power of a quantity.

export of electrical energy: Supply of Electrical Energy by a Generator to the CEB system.

Exports: Shipments of goods from within the 50 States and the District of Columbia to U.S. possessions and territories or to foreign countries.

Exposed: Not isolated or guarded.

exposed conductive part : A conductive part of equipment which can be touched and which is not a live part but which may become live under fault conditions.

Expressway Roadway (Lighting): A divided major roadway for through traffic with partial control of access and generally with interchanges at major crossroads. Expressways for noncommercial traffic within parks and parklike areas are generally known as parkways.

Extension, Box: An add-on section that fits to the bottom or to the top of a grade level box, extending its height.

Extensions: Any new reserves credited to a previously producing reservoir because of enlargement of its proved area. This enlargement in proved area is usually due to new well drilling outside of the previously known productive limits of the reservoir.

Extensions, discoveries, and other additions: Additions to an enterprise's proved reserves that result from (1) extension of the proved acreage of previously discovered (old) reserves through additional drilling in periods subsequent to discovery and (2) discovery of new fields with proved reserves or of new reservoirs of proved reserves in old fields.

Extensometer Test: The measurement of deformation during stressing in the elastic range, permitting determination of elastic properties such as properties such as proportional limit, proof stress, yield strength by the offset method and so forth. Requires the use of special testing equipment and testing procedures such as the use of an extensometer or the plotting of a stress strain diagram.

External Trigger: Voltage pulse from an external source that triggers an event such as A/D conversion.

External Undercut: Any recess or projection on the outside of the die block which prevents its removal from the cavity.

Externalities: Benefits or costs, generated as a byproduct of an economic activity, that do not accrue to the parties involved in the activity. Environmental externalities are benefits or costs that manifest themselves through changes in the physical or biological environment.

Extra Hard Temper: In brass mill terminology, Extra Hard is six B&S numbers hard or 50.15% reduction from the previous annealing or soft stage.

Extra High Voltage: An electrical system or cable designed to operate at 345kv (nominal) or higher.

Extra Spring Temper: In brass mill terminology. Extra Spring is ten numbers hard or 68.55% reduction in thickness from the previous annealing or soft stage.

Extraction loss: See Natural gas plant liquids (NGPL) production.

Extractive industries: Industries involved in the activities of (1) prospecting and exploring for wasting (non-regenerative) natural resources, (2) acquiring them, (3) further exploring them, (4) developing them, and (5) producing (extracting) them from the earth. The term does not encompass the industries of forestry, fishing, agriculture, animal husbandry, or any others that might be involved with resources of a regenerative nature.

extraneous conductive part : A conductive part liable to introduce a potential, generally earth potential, and not forming part of the electrical installation.

Extraordinary income deductions (electric utility): Those items related to transactions of a nonrecurring nature that are not typical or customary business activities of the utility and that would significantly distort the current year's net income if reported other than as extraordinary items.

extrapolation: Filling in values or terms of a series on either side of the known values thus extending the range of values.

extrinsic semiconductor: A semiconductor in which the carrier density results mainly from the presence of impurities or other imperfections, as opposed to an intrinsic semiconductor in which the electrical properties are characteristics of the ideal crystal.

Extrinsic semiconductor: The product of doping a pure semiconductor.

Extruded Abs: ABS plastic is a copolymer made from combining acrylonitril, butadiene, and styrene. The composition of the ABS resin is dictated by the application of the material with styrene usually making up about 50% of the compound and providing a hard, shiny surface. The acrylonitrile provides strength and the butadiene adds resiliency. Extruded ABS is the result of using an extrusion manufacturing process to pull the ABS plastic through a die, resulting in long pieces of material with a constant cross-sectional shape.

Extruded Aluminum Tubing: Extruded aluminum tubing is the result of using an extrusion manufacturing process to pull the aluminum through a die with a center plug, resulting in long pieces of aluminum tubing with a constant cross-sectional shape. The extrusion process results in accurate and straight tubes, with a consistent thickness and surface finish.

Extruded Flexible Tubing: Extruded flexible tubing is the result of using an extrusion manufacturing process to pull a flexible material, such as polypropylene plastic, through a die with a center plug. The process results in long pieces of tubing with a constant cross-sectional shape. The extrusion process results in accurate tubes with a consistent thickness and surface finish. Extruded flexible tubing is in many different applications, including as a replacement for traditional copper pipe in residential and commercial plumbing systems.

Extruded Polypropylene: Extruded polypropylene tubing is the result of using an extrusion manufacturing process to pull the plastic through a die with a center plug, resulting in long pieces of tubing with a constant cross-sectional shape. The extrusion process results in accurate tubes with a consistent thickness and surface finish. Extruded polypropylene tubing is often used in piping systems for moving fluids or gases, especially in applications where high temperature and high pressure are encountered. Polypropylene is also resistant to many different chemicals and acids.

Extrusion: Shaping metal into a chosen continuous form by forcing it through a die of an appropriate shape.

Extrusion: The application of a semisolid rubber or plastic material such as PVC onto a conductor

Extrusion: The process used to create objects of a fixed cross-sectional profile. A material is pushed or pulled through a die of the desired cross-section.

Extrusion: The application of a semi-solid plastic or rubber material by forcing it on a conduit or wire passing through the extruder in a continuous fashion.

Extrusion Process: Forcing heated alloy billet through a die by pressure

Eye Bands: Metal bands wrapped through the center or eye of the coil to prevent it from uncoiling and to hold strip mulch together.

Eye Bolts: An eye bolt is a type of fastener that has screw threads on one end and a loop on the end where a traditional screw head is usually found. The loop is used to clip or tie other components for the purpose of fastening or hanging an object from the eye bolt.

Eyeholing: A coating defect, similar to cratering, but with exposed metal in the void.

E-Z-C: Special jacketing combining excellent ozones, oil and abrasion resistance, low-temperature flexibility and color retention.

Ezy Out: A tool for removing broken bolts or studs from a hole.

F: Fahrenheit

F: Flat band metallic armor.

F: Fahrenheit

F. D. Fan: Forced Draft Fan.

F.A.O.: An abbreviation of "finish all over"; it designates that a forging must have sufficient size over the dimensions given on the drawing so that all surfaces may be machined in order to obtain the dimensions shown on the drawing. The amount of additional stock necessary for machining allowance depends on the size and shape of the part and is agreed on by the vendor and the user.

F.A.S.: See Free Alongside Ship.

f.a.s. value: Free alongside ship value. The value of a commodity at the port of exportation, generally including the purchase price plus all charges incurred in placing the commodity alongside the carrier at the port of exportation in the country of exportation.

F.O.B: See Free On Board.

F.O.B.: Prices denote the so called free on board payment, for material that a consumer or agent will give when he picks it up at a dealer's dock. The f.o.b. prices are usually less than delivered to works prices for the same items.

f.o.b. price: The price actually charged at the producing country's port of loading. The reported price should be after deducting any rebates and discounts or adding premiums where applicable and should be the actual price paid with no adjustment for credit terms.

f.o.b. value (coal): Free-on-board value. This is the value of coal at the coal mine or of coke and breeze at the coke plant without any insurance or freight transportation charges added.

FA: Forced Air, a cooling classification for transformers now classified as ONAF. Oil type, Forced circulation through cooling (i.e. cooling pumps) and natural convection flow in windings.

Fabricated fuel: Fuel assemblies composed of an array of fuel rods loaded with pellets of enriched uranium dioxide.

Fabricating Ingot: A cast form suitable for subsequent working by such methods as rolling, forging, extruding, etc. (?Rolling ingot.? ?Forging ingot.? ?Extrusion Ingot.?)

Fabrication: The joining, usually by welding, of two or more parts to produce a finished assembly. The components of the assembly may be a combination of cast and wrought materials.

Fabricator: A producer of intermediate products that does not also produce primary metal. Examples include brass, wire and rod mills which buy copper and other primary or secondary metals to produce brass and other copper alloys or take raw forms of metal and make building, magnet, telecommunications and/or industrial wire, rod and similar products.

Face: To machine a flat surface, as in the end of a shaft in the lathe. The operation is known as

facing.

Face Centered (Concerning Cubic Space Lattices): Having equivalent points at the corners of the unit cell and at the centers of its six faces. A face centered cubic space lattice is characteristic of one of the close packed arrangements of equal hard spheres.

Face channel or channel sample: a sample taken at the exposed coal in a mine by cutting away any loose or weathered coal then collecting on a clean surface a sample of the coal seam by chopping out a channel of uniform width and depth; a face channel or face sample is taken at or near the working face, the most freshly exposed coal where actual removal and loading of mined coal is taking place. Any partings greater than 3/8 inch and/or mineral concretions greater than 1/2 inch thick and 2 inches in maximum diameter are normally discarded from a channel sample so as better to represent coal that has been mined, crushed, and screened to remove at least gross non-coal materials.

Face drill: is used in conventional mining to drill shot holes in the coalbed for explosive charges.

Face Milling: Milling a large flat surface with a milling cutter that operates in a plane that is at right angles to its axis.

Face Plate: A large circular plate with slots and holes for mounting the workpiece to be machined. It is attached to the headstock of a lathe.

Facilities charge: An amount to be paid by the customer in a lump sum, or periodically as reimbursement for facilities furnished. The charge may include operation and maintenance as well as fixed costs.

Facility: An existing or planned location or site at which prime movers, electric generators, and/or equipment for converting mechanical, chemical, and/or nuclear energy into electric energy are situated or will be situated. A facility may contain more than one generator of either the same or different prime mover type. For a cogenerator, the facility includes the industrial or commercial process.

Facility (1). : (in general) a feature or capability offered by a system, item of hardware or software.

Facility (2). : (in telco environments) line and equipment used to furnish a completed circuit.

Facility (3). : (in packet-switched networks) see national facilities and network facilities.

Facility switching. : A communications facility, which effects the onward transmission of information, through interconnection of circuits, loops, channels or trunks.

Facing: The process of making a flat or smooth surface (usually the end) on a piece of stock or material.

Facing Sand: Specially prepared molding sand mixture used in the mold adjacent to the pattern to produce a smooth casting surface.

Facsimile.: A communications technology originally developed for the communication of graphic images, now widely used in business as a message communications medium.

Factor of Assurance: The ratio of the voltage at which wire or cable insulation is tested to that at which it is used.

factor of earthing : This is the ratio of the highest r.m.s. phase-to-earth power frequency voltage on a sound phase during an earth fault to the r.m.s. phase-to-phase power frequency voltage which would be obtained at the selected location without the fault. This ratio characterises, in general terms, the earthing conditions of a system as viewed from the

selected fault location.

Factory Automation: Factory automation is the process of using an integrated collection of technologies to perform the functions typically completed by one or more human laborers. Factory automation makes use of sensors, computer systems, network communications and control systems to monitor and control the process being automated. One of the advantages of automation is an increase in the efficiency of the production process and therefore a reduction in the unit cost.

Factory Ventilation: Factory ventilation is the term used to describe the systems used to control the environment and air quality in a factory or facility. The ventilation system may be used to control temperature, humidity, air quality, and to remove contaminants such as hazardous gases, odors, and particles.

Fading: A coating defect consisting of the condition in a colored coating where the color, either transparent or opaque, appears to get lighter or bleached out. Heat, light, or chemical exposure usually causes fading.

Fahrenheit: A temperature scale on which the boiling point of water is at 212 degrees above zero on the scale and the freezing point is at 32 degrees above zero at standard atmospheric pressure.

fahrenheit: Temperature scale in which the melting point of ice is taken as 32 oF and the boiling point of water under standard atmospheric pressure (760 torr) as 212 oF. A Fahrenheit degree is 1/180 of the difference between these two temperatures.

Fail-Safe: The device which responds in the safe action during the failure which gives the minimum harm or no harm.

Fail-Safe Braking Systems: Fail safe braking systems are often used in heavy transportation such as trains and trucks to ensure that any failure in the braking system results in a process designed to minimize damage to the vehicle and its passengers. In trains and trucks, air brakes are often used and are designed such that, in the event of a failure in the system, the brakes are applied and used to bring the vehicle to a stop.

Failure or hazard: Any electric power supply equipment or facility failure or other event that, in the judgment of the reporting entity, constitutes a hazard to maintaining the continuity of the bulk electric power supply system such that a load reduction action may become necessary and reportable outage may occur. Types of abnormal conditions that should be reported include the imposition of a special operating procedure, the extended purchase of emergency power, other bulk power system actions that may be caused by a natural disaster, a major equipment failure that would impact the bulk power supply, and an environmental and/or regulatory action requiring equipment outages.

Fall Arresters: Fall arresters are part of a safety system designed to help protect humans in the event of an accidental fall from a building, platform, or other elevated structure. Fall arresters are used to stop a fall once it has already begun and take on two forms - netting systems and lifelines - both designed to catch the falling person and limit how far they fall.

Fall Prevention Equipment: Fall prevention equipment is a collection of parts used to create a safety system designed to help prevent accidental falls from a building, platform, or other elevated structure. Fall prevention equipment also includes components such as fall arresters to help protect the person in the event the fall is not prevented.

Fan beam : A type of radar beam pattern with large vertical and narrow horizontal coverage,

used normally with search radars.

Fan Hanger Receptacle: A single receptacle furnished with a cover plate and having a stud or other means for supporting a wall hung fan.

Fan Hum: Noise created by a fan motor when controlled by a standard speed control.

Far Side: The drive side of the line (farthest away from the pulpit).

Farad: The capacitance value of a capacitor of which there appears a potential difference of one volt when it is charged by a quantity of electricity equal to one coulomb.

Farad: Farad is the unit of capacitance. It is named after Michael Faraday. The farad measures how much electric charge is accumulated on the capacitor. 1 farad is the capacitance of a capacitor that has charge of 1 coulomb when applied voltage drop of 1 volt

Farad: A unit of electric capacity.

Farad (F): The basic unit of measurement for capacitance. One farad is that capacitance that will store one coulomb of charge when the charging force is one volt. Since the farad is a very large unit, capacitance will more commonly be expressed as microfarad (uF) or picofarad (pF) values. Named for Michael Faraday, the British physicist and chemist who discovered electromagnetic induction and proposed the field theory later developed by Maxwell and Einstein.

farad (F) : SI unit of electric capacitance. One farad is defined as the ability to store one coulomb of charge per volt of potential difference between the two conductors.

faraday: Quantity of electricity required to liberate or deposit 1 gram-equivalent of an ion. 1 Faraday = 96,490 coulomb.

Far-End Crosstalk (FEXT): Crosstalk measured at the cable end opposite from where the signal originates.

Farm out (in) arrangement: An arrangement, used primarily in the oil and gas industry, in which the owner or lessee of mineral rights (the first party) assigns a working interest to an operator (the second party), the consideration for which is specified exploration and/or development activities. The first party retains an overriding royalty or other type of economic interest in the mineral production. The arrangement from the viewpoint of the second party is termed a "farm-in arrangement."

Farm use: Energy use at establishments where the primary activity is growing crops and/or raising animals. Energy use by all facilities and equipment at these establishments is included, whether or not it is directly associated with growing crops and/or raising animals. Common types of energy-using equipment include tractors, irrigation pumps, crop dryers, smudge pots, and milking machines. Facility energy use encompasses all structures at the establishment, including the farm house.

Farval System: A lubrication system. See Grease System.

FASB : Financial Accounting Standards Board

Fast Acting Fuse: A fuse which opens on overload and short circuits very quickly. This type of fuse is not designed to withstand temporary overload currents associated with some electrical loads.

Fast breeder reactor (FBR): A reactor in which the fission chain reaction is sustained primarily by fast neutrons rather than by thermal or intermediate neutrons. Fast reactors require little or no moderator to slow down the neutrons from the speeds at which they are ejected from fissioning nuclei. This type of reactor produces more fissile material than it

consumes.

Fast breeder reactor (FBR): A fast neutron reactor configured to produce more fissile material than it consumes, using fertile material such as depleted uranium in a blanket around the core.

Fast neutron reactor: A reactor with little or no moderator and hence utilizing fast neutrons. It normally burns plutonium while producing fissile isotopes in fertile material such as depleted uranium (or thorium).

fast neutrons: Neutrons resulting from nuclear fission that have lost little of their energy by collision and therefore travel at high speeds. It is usual to define neutrons with energies in excess of 0.1 MeV as fast.

Fast select. : (in packet-switched networks) a calling method which allows the user to expedite the transmission of a limited amount of information (usually 128 bytes). The information is sent along with the call request packet; therefore, the information arrives faster than in other call methods (which send the information in the packets that follow the call request packet).

Fastmet: A process to directly reduce iron ore to metallic iron pellets that can be fed into an electric arc furnace with an equal amount of scrap. This process is designed to bypass the coke oven blast furnace route to produce hot metal from iron ore. It is also one of several methods that mini mills might use to reduce their dependence on high quality scrap inputs (see Direct Reduced Iron and Hot Briquetted Iron).

FAT: Factory acceptance test. Validation procedures witnessed by the customer at the factory.

Fatigue Crack Or Failure: A fracture starting from a nucleus where there is an abnormal concentration of cyclic stress. The fracture surface is smooth and frequently shows concentric (sea shell) markings with a nucleus as a center.

Fatigue Life: The number of cycles of stress that can be sustained prior to failure for a stated test condition.

Fatigue Limit: The maximum stress below which a material can presumably endure an infinite number of stress cycles. If the stress is not completely reversed, the value of the mean stress, the minimum stress or the stress ratio should be stated.

Fatigue Limit (Endurance Limit): Maximum stress that a material can presumably endure without failure for an infinite number of load cycles.

fatigue of metals: Deterioration of metals owing to repeated stresses above a certain critical value, accompanied by changes in the crystalline structure of the metal.

Fatigue Resistance: Resistance to metal crystallization that occurs when the conductors or wires break from flexing.

Fatigue Strength: Maximum stress that a material will endure without failure for a specified number of load cycles.

Fatigue Tester: Fatigue tests are made with the object of determining the relationship between the stress range and the number of times it can be applied before causing failure. Testing machines are used for applying cyclically varying stresses and cover tension, compression, torsion and bending or a combination of these stresses.

Fatigue Testing: Fatigue tests are made with the object of determining the relationship between the stress range and the number of times it can be applied before causing failure. Testing machines are used for applying cyclically varying stresses and cover tension,

compression, torsion and bending or a combination of these stresses.

fault: A circuit condition in which current flows through an abnormal or unintended path.

Fault Blanking: it is action which eliminate the fault.

Fault Close Rating: The ability, in amps, of a switching device to "close" into a fault of specific magnitude, without excessive arcing.

Fault Current: The current that flows as a result of a shortcircuit condition.

fault current: A current resulting from a fault.

Fault Current: Current that flows through a circuit during an electrical fault condition. A fault condition occurs when one or more electrical conductors contact ground and/or each other.

Fault Indicator: A device installed on a conductor to determine if current exceeded the indicator's current rating. Fault indicators sense using use the magnetic field induced by load current.

Fault Indicator: Fault indicator may be any type of indication to user like any buzzer or indication signals.

Fault Tolerant: The capability of any machine or equipment to work even in faulty condition

FBR : Fast Breeder Reactor

FCC: Flexible control cable.

FCC: Federal Communication Commission

Fcs, frame check sequence. : Usually a 16-bit field used for error detection in bit-oriented communications protocols.

FDDI (Fiber Distributed Data Interface): An ANSI standard for 100 Mbps fiber physical and data protocols, generally used in "backbone" applications.

Fddi. : A high speed lan standard being developed by an ansi committee. Employs token passing on dual 100 mbps fibre optic rings.

Fdm, frequency division multiplexing, frequency division multiplexor. (1): A multiplexing technique that partitions the composite bandwidth into channels, assigning a specific range of frequencies to each channel.

Fdm, frequency division multiplexing, frequency division multiplexor. (2). : A device that performs this frequency partitioning.

Fe: Chemical symbol for Iron.

Feather Edge: A sharp reduction in gauge on the edge of a band which is caused be grooves worn in rolls due to extensive rolling of the same width material. This is done for coating control on edge. The gauge variations on a feathered edge generally does not extend in from the edge more than one inch.

Federal coal lease: A lease granted to a mining company to produce coal from land owned and administered by the Federal Government in exchange for royalties and other revenues.

Federal electric utility: A utility that is either owned or financed by the Federal Government.

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

Federal Energy Regulatory Commission (FERC): FERC is an independent regulatory

agency within the U.S. Department of Energy that approves rates for wholesale electricity transactions and transmission of electricity in interstate commerce for utilities, power marketers, power pools, power exchanges and

Federal Power Act: Enacted in 1920, and amended in 1935, the Act consists of three parts. The first part incorporated the Federal Water Power Act administered by the former Federal Power Commission, whose activities were confined almost entirely to licensing non-Federal hydroelectric projects. Parts II and III were added with the passage of the Public Utility Act. These parts extended the Act's jurisdiction to include regulating the interstate transmission of electrical energy and rates for its sale as wholesale in interstate commerce. The Federal Energy Regulatory Commission is now charged with the administration of this law.

Federal Power Commission (FPC): The predecessor agency of the Federal Energy Regulatory Commission. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and natural gas industries. It was abolished on September 30, 1977, when the Department of Energy was created. Its functions were divided between the Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

Federal region: In a Presidential directive issued in 1969, various Federal agencies (among them the currently designated Department of Health and Human Services, the Department of Labor, the Office of Economic Opportunity, and the Small Business Administration) were instructed to adopt a uniform field system of 10 geographic regions with common boundaries and headquarters cities. The action was taken to correct the evolution of fragmented Federal field organization structures that each agency or component created independently, usually with little reference to other agencies' arrangements. Most Federal domestic agencies or their components have completed realignments and relocations to conform to the Standard Federal Administration Regions (SFARs).

Fee interest: The absolute, legal possession and ownership of land, property, or rights, including mineral rights. A fee interest can be sold (in its entirety or in part) or passed on to heirs or successors.

Feed: The rate of travel of a cutting tool across or into the work, expressed in inches per minute or in inches per revolution.

Feed Mechanism: The mechanism, often automatic, which controls the advancing movement (feed) of the cutting tools used in machines.

Feed Through: The practice of wiring a single branch circuit through a device and feeding power to other devices wired downstream. Feeding through a GFI would provide protection to downstream receptacles.

Feed Water: Cleaned and softened, chemically treated and steam heated, raw water used for steam generation within the boiler. The temperature of feed water normally is 275-280 B0 F.

Feed Water Pumps: Four pumps (3 in service) used to supply water to the boiler.

Feedback: Part of a closed loop system, which monitors back information about the condition under control for comparison.

feedback: The term is generally applied to electronic amplifiers to which a portion of the output energy is used to reduce or increase the amplification, by reacting on an earlier stage according to the relative phase of the return.

Feedback Loop: Any closed circuit consisting of one or more forward elements and one or more feedback elements.

Feedback. : The return of energy from one point in a system to an earlier point.

Feeder: Also called "Riser", it is part of the gating system that forms the reservoir of molten metal necessary to compensate for losses due to shrinkage as the metal solidifies.

Feeder: A three phase distribution line circuit used as a source to other three phase and single phase circuits.

feeder: All circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device.

Feeder: A circuit, such as conductors in conduit or a busway run, which carries a large block of power from the service equipment to a sub-feeder panel or a branch circuit panel or to some point at which the block power is broken into smaller circuits.

Feeder line: An electrical line that extends radially from a distribution substation to supply electrical energy within an electric area or sub-area.

Feeder Table: A round table that rotates material onto the #10 and #21 conveyor belts.

Feeding: The process of supplying molten metal to compensate for volume shrinkage while the casting is solidifying.

Feedstock: Any raw material.

Feeler Gauge: 1) Gauge used to gap the slitter knives. The steel being side trimmed determines the gap between the slitter knives. The gauge slides between the knives measuring the gap between them. 2) A tool used to set the gap of the slitter knives.

Female Part: A concave piece of equipment which receives a mating male (convex) part.

femto (f): Decimal sub-multiple prefix corresponding to 10⁻¹⁵.

FEP: Fluorinated ethylene propylene insulated wire.

Fep, front-end processor. : See communications control unit.

FEPB: Fluorinated ethylene propylene insulated wire but with glass or asbestos braid.

FERC: Federal Energy Regulatory Commission.

FERC guidelines: A compilation of the Federal Energy Regulatory Commission's enabling statutes; procedural and program regulations; and orders, opinions, and decisions.

FERC : Federal Energy Regulatory Commission

fermi: A unit of length used in nuclear physics. 1 fermi = 10⁻¹⁵ meter.

Fermi level: Energy level at which the probability of finding an electron is one-half. In a metal, the Fermi level is very near the top of the filled levels in the partially filled valence band. In a semiconductor, the Fermi level is in the band gap.

fermi-dirac statistics: The branch of statistical mechanics used with systems of identical particles which have the property that their wave function changes sign if any two particles are interchanged.

Ferralloy: A metal product commonly used as a raw material feed in steelmaking, usually containing iron and other metals to aid various stages of the steelmaking process such as deoxidation, desulfurization and adding strength. Examples: ferrochrome, ferromanganese and ferrosilicon.

Ferrand: A device that senses the amount of travel of the A.G.C. cylinders.

ferrimagnetism: The type of magnetism occurring in materials in which the magnetic moments of adjacent atoms are anti-parallel, but of unequal strength, or in which the number

of magnetic moments oriented in one direction outnumber those in the reverse direction. Typical ferrimagnetic materials are the ferrites.

Ferrite Banding: Parallel bands of free ferrite aligned in the direction of working. Sometimes referred to as ferrite streaks.

Ferrite Inductor: An inductor is an electrical component used to store the energy resulting from current passing through it in a magnetic field. An inductor is made by wrapping a conducting wire into a coil around a central core, with each turn of the wire termed a winding. The number of windings in the coil is directly related to the inductance. Ferrite inductors use iron or iron alloys for the core material. Ferrite has a high magnetic permeability, or ability to generate a magnetic field. As a result, the use of a ferrite core greatly increases the inductance.

Ferrite Pearlite Banding: Inhomogeneous distribution of ferrite and pearlite aligned in filaments or plates parallel to the direction of working.

ferrites: A group of ceramic materials which exhibit the property of ferrimagnetism. As they are basically electrical insulators, they do not suffer from the effects of eddy currents.

Ferritic: The second largest class of stainless steel, constituting approximately 25% of stainless production. Ferritic stainless steels are plain chromium steels with no significant nickel content; the lack of nickel results in lower corrosion resistance than the austenitics (chromium nickel stainless steels). Ferritics are best suited for general and high temperature corrosion applications rather than services requiring high strength. They are used in automotive trim and exhaust systems, interior architectural trim, and hot water tanks. Two of the most common grades are type 430 (general purpose grade for many applications, including decorative ones) and type 409 (low cost grade well suited to withstanding high temperatures).

Ferritic Grain Size: The grain size of the ferric matrix of a steel.

Ferro Alloy: A metal product commonly used as a raw material feed in steelmaking, usually containing iron and other metals, to aid various stages of the steelmaking process such as deoxidation, desulfurization, and adding strength. Examples: ferrochrome, ferromanganese, and ferrosilicon.

Ferro Manganese: An alloy of iron and manganese (80% manganese) used in making additions of manganese to steel or cast iron. Ferroalloy, An alloy of iron with a sufficient amount of some element or elements such as manganese, chromium, or vanadium for use as a means in adding these elements into molten steel.

Ferro resonance: In transformers, an overvoltage condition that can occur when the core is excited through capacitance in series with the inductor. This is especially prevalent in transformers that have very low core losses. It can generally be prevented by having a low

Ferro resonance: The resonance which occurs when a circuit containing a nonlinear inductance is fed from a source that has series capacitance and the circuit is subjected to a disturbance such as opening of a switch.

Ferrochrome: An alloy of iron and chromium with up to 72% chromium. Ferrochrome is commonly used as a raw material in the making of stainless steel.

ferroelectrics: Dielectric materials which exhibit properties such as hysteresis which are usually properties of ferromagnetic materials.

Ferromagnetic: The ability to become highly magnetic and have the ability to retain a

permanent magnetic moment. The elementary magnetic dipoles inside the domain are all oriented in a direction parallel to each other.

ferromagnetism: Ferromagnetism is due to unbalanced electron spin in the inner electron orbits of the elements concerned giving the atoms a resultant magnetic moment.

Ferromagnetic materials have very large magnetic permeabilities which vary with the strength of the applied field.

ferroresonance: Resonance resulting when the iron core of an inductive component of an LC circuit is saturated, increasing the inductive reactance with respect to the capacitance reactance.

Ferrules: A ferrule is a type of fastener often used to create a loop from materials such as rope or wire. The ferrule is a tube-like fastener through which one or more strands of the material are passed through. A tool such as a pliers or other crimping device is then used to crimp the ferrule down around the material until it is tight enough to restrict movement through the ferrule.

Fertile (of an isotope): Capable of becoming fissile, by capturing neutrons, possibly followed by radioactive decay; e.g., U-238, Pu-240.

Fertile material: Material that is not itself fissionable by thermal neutrons but can be converted to fissile material by irradiation. The two principal fertile materials are uranium-238 and thorium-232.

fertile material: Isotopes which can be transformed into fissile material by the absorption of neutrons.

Festoon System: A festoon system is a specialized suspension system designed to hang, support and move hoses and cables around a working environment. Depending on the application, the festoon system will include a pulley or trolley system, support clips or clamps, handling equipment, and a control unit.

FET: [see field effect transistor].

Fettle: British term meaning the process of removing all runners and risers and cleaning off adhering sand from the casting. Also refers to the removal of slag from the inside of the cupola and in Britain to repair the bed of an open hearth.

Ff, form feed. : An ascii or ebcdic printer control character used to skip to the top of the next page (or form).

FF-1: Fixture wire, flexible, rubber insulated, single conductor. 300V, 60°C

FF-2: Same as FF-1 with 600V rating.

FFH-1: Heat-resistant fixture wire otherwise same as FF-1, 300V.

FFH-2: Same as FFH-1 with 600V rating.

FGD : Flue-Gas Desulfurization

Fibc Bulk Bag: A flexible intermediate bulk container (FIBC), also known as a bulk bag, is used to store bulk materials such as grain, sand, or other granular products. FIBC bags are typically made of a thick, woven plastic material and are capable of holding on the order of 1000 kg of material. FIBC bags typically have some type of loop in order to support the mounting and movement of the bags in bag handling systems.

Fiber: (1) The characteristic of wrought metal that indicates directional properties. It is revealed by etching a longitudinal section or manifested by the fibrous appearance of a fracture. It is caused chiefly by extension of the constituents of the metal, both metallic and

nonmetallic, in the direction of working. (2) The pattern of preferred orientation of metal crystal after a given deformation process.

Fiber (Optical Fiber): A thin filament of glass or plastic capable of carrying information in the form of light.

Fiber Optic Cable Joining: Fiber optic cable joining is the process of splicing two pieces of fiber optic cable together. Joining fiber optic is usually accomplished by using a pair of mating connectors, each used to terminate an end of the cable to be joined. The connectors are designed to ensure proper alignment of the fiber cores in each piece. In addition, the ends must be cleaned cut and pieced together end-to-end, with no gap, to minimize signal loss due to the splice.

Fiber Optic Cables: The use of transparent glass or plastic fibers to transmit light by internal reflection.

Fiber Optic Sensors: A fiber optic sensor is a measurement device that uses transparent fiber to detect and measure physical quantities. Fiber optic sensors can be used to measure pressure, temperature, and other physical attributes as a result of measuring their impact on the light spectrum transported in the fiber. There are many different types of sensors covering a wide range of applications. An advantage of fiber optic sensors is that external power sources are not necessary to supply power to the sensor as with traditional electronic sensors.

Fiber Optics: Fiber optics is the term applied to the study and application of optical fibers in many different applications. Fiber optics makes use of transparent fibers that are capable of transmitting light over long distances, at high bandwidths and with limited signal loss. Fiber optics is guided by the scientific principle of refraction, or the bending of light, first seen experimentally in the 1840's. Practical applications of fiber optics began to appear in the early 1900's and can not be found in engineering sensors, communications, lighting, and media applications.

Fiber Optics: Communications scheme which converts electrical energy to light in order to transmit through optical fiber.

Fiber Or Fibre: Direction in which metals have been caused to flow, as by rolling, with microscopic evidence in the form of fibrous appearance in the direction of flow.

Fiber Stress: Unit stress which exists at any given point in a structural element subjected to load; given as load per unit area.

Fibers: Ensures the proper alignment of the strip as it enters the knives in the Sheet Mill.. Fibers are used to hold the strip just above the knife to prevent knife marks on the steel.

Fibre Channel: This is computer technology used to connect at high speed.

Fibre optic cable, fibre optics. : A transmission medium composed of small strands of glass each of which provides a path for light rays, which acts as a carrier.

Fibrous Filler: A material used to fill interstices in cables made from fibers such as cotton, glass, etc.

Fibrous Fracture: A fracture whose surface is characterized by a dull gray or silky appearance.

Fidelity. : The degree of accuracy with which a system (or portion of a system), reproduces in its output the essential characteristics of the signal which is impressed on its input.

Fiducial Value: A specified value to which reference is made in order to specify the accuracy of the transducer. For transducers the fiducial value is the span. For transducers having

reversible or symmetrical outputs the fiducial value can be either the span or half the

Fiducial Value: It is the specified value to which reference is made in order to specify the accuracy of the transducer. For transducers the fiducially value is the span.

Field: An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature and/or stratigraphic condition. There maybe two or more reservoirs in a field that are separated vertically by intervening impervious strata or laterally by local geologic barriers, or by both.

field: The region in which an electrically charged body (electric field), or a magnetised body (magnetic field) exerts its influence.

Field Adjustable Trim Potentiometer: A small, typically screwdriver-adjustable, variable resistor. Used to adjust minimum level of light or speed of a fan.

Field area: A geographic area encompassing two or more pools that have a common gathering and metering system, the reserves of which are reported as a single unit. This concept applies primarily to the Appalachian region.

field coil: A coil of wire used for magnetising an electromagnet.

Field Current: The magnetizing current of a device such as a transformer. Also known as exciting current.

Field Current: The current supplied to the field windings of a generator or motor to establish the magnetic field for its operation.

Field discovery year: The calendar year in which a field was first recognized as containing economically recoverable accumulations of oil and/or gas.

Field Effect Transistor (FET): A transistor type that uses voltage to control current through the device. See JFET and MOSFET.

field emission: The emission of electrons from an unheated surface as a result of a strong electric field existing at that surface.

Field production: Represents crude oil production on leases, including lease condensate. Excludes plant condensate and other processed liquids.

Field separation facility: A surface installation designed to recover lease condensate from a produced natural gas stream usually originating from more than one lease and managed by the operator of one or more of these leases.

Field Wire: A term defining a light, small, wire type usually produced in long lengths for use in communications in the field.

Field. : A group of bits that describes a specified characteristic; displayed on a reserved area of a crt or located in a specific part of a record.

Fieldbus: All-digital communication network used to connect process instrumentation a decontrol systems. Designed to replace existing 4-20 mA analog signals with bidirectional, multivariable data communications capability.

Fieldbus Components: FieldBus is a network communications protocol used for the purpose or real-time control in industrial applications. FieldBus components include any of the individual parts of the distributed network, including sensors, controllers, Ethernet adapters, and cabling. The International Electrotechnical Commission (IEC) publishes standards for all electrical, electronic and related technologies. IEC 61158 provided standards for the design and application of FieldBus systems

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field-effect transistor FET : A three terminal semiconductor device that depends on the action of an electric field to control its conductivity. In a "FET" the current is from source to drain because a conducting channel is formed by a voltage field between the gate and the source.

Figs, figures shift (1). : A physical shift in a terminal using baudot code that enables the printing of numbers and symbols.

figs, figures shift (2). : The character that causes the shift.

filament: A thin thread. A wire of high melting point heated by the passage of current inside a vacuum tube, incandescent lamp or other similar device.

File Hardness: Hardness as determined by the use of file of standardized hardness on the assumption that a material which cannot be cut with the file is as hard as, or harder than the file. Files covering a range of hardnesses may be employed.

File Rasp: Tool used to remove zinc or tin buildup from the welder wheels.

File rate schedule: The rate for a particular electric service, including attendant contract terms and conditions, accepted for filing by a regulatory body with appropriate oversight authority.

File server protocol. : (in lan technology) a communications protocol that allows application programs to share files.

File Test: A test for hardness in which a corner of a file is run across the piece of metal being tested. The hardness is shown by the dent the file makes.

File. : A collection of related data records.

Filed Edges: Finished edges, the final contours of which are produced by drawing the strip over a series of small steel files. This is the usual and accepted method of dressing the edges of annealed spring steel strip after slitting in cases where edgewise slitting cracks are objectionable or slitting burr is to be removed.

Filing: Any written application, complaint, declaration, petition, protest, answer, motion, brief, exception, rate schedule, or other pleading, amendment to a pleading, document, or similar paper that is submitted to a utility commission.

Filing time/time handed in. : The date and time, a message is received from an originator by the communication centre for transmission. The filing time for refile messages is the date and time the message is received by a communications centre for refile. See julian filing time.

Fill: In conduit or cable tray installations, the portion of the total cross-sectional area of the tray or conduit that can be occupied by conductors or cables

Fill factor: The ratio of a photovoltaic cell's actual power to its power if both current and voltage were at their maxima. A key characteristic in evaluating cell performance.

Filler: A material used in multiconductor cable to occupy large interstices formed by the cable assembly. Also, a material added to an insulation compound to add volume and increase impact resistance

Filler: The material used to fill the Gap.

Filler: (a) A material used in the cable to fill large interstices between electrical components.
(b) A substance, often inert, added to a compound to improve properties and/or decrease cost.

Filler (Fuse): A non-conductive medium filling the inside of a fuse for quenching electric arcs and absorbing energy produced by element or link melting during interruption.

Filler Cap: A mechanical device which provides an access for filling a reservoir or tank. Normally equipped with a fine screen to strain out dirt particles.

Filler Metal: A third material that is melted concurrently with the parent metal during fusion or braze welding. It is usually, but not necessarily, of different composition from the parent metals.

Film: Another term to describe thin plastic sheeting.

Filter: A circuit designed to pass a specific frequency range while rejecting all others.

filter: A circuit that is designed to pass signals with desired frequencies and reject or attenuate other frequencies.

Filter Bags: Filter bags are used in filtration systems to capture and contain particulates separated from the environment. Filter bags are often manufactured from a woven fabric or plastic material such that very fine particles are contained within the bag. Filter bags come in many different sizes, shapes, and materials depending on the specific application.

Filter Canister: The portion of the filter assembly that holds the filter element.

Filter Element: A series of wire or fabric meshes, which are bonded together by caps or perforated cylinders and are fitted into hydraulic system passages to strain fine particles and silt from passed through the passage.

Filter Housing: (Head) The portion of the filter assembly in which the filter element is seated.

Filter Presses: A filter press is an industrial machine used to separate solid material from liquid-solid solutions, also known as slurries. Filter presses uses pressure applied to filter plates to squeeze liquid out of the slurry, leave the solid material behind. The remaining solid is called the filter cake and is progressively built up with the processing of additional slurry solution. Filter presses are often used in the food processing, pharmaceutical and chemical industries.

Filter Sludge: A material that is produced when the water from the clarification tanks is filtered for the scrubber system.

Filter. : An arrangement of electronic components designed to pass signals in one or several frequency bands and to attenuate signals in other frequency bands.

Filtration Systems: Filtration systems are used to separate solids from a liquid or gas. Filtration systems take on many different forms, depending on the application and the environment. Filtration systems can be used to remove particulates and odors from the air in air filtration systems, to clean micro-organisms and waste out of fish tanks, or to separate solids from slurry solutions in industrial processing applications. The processes and equipment used in the filtrations system will depend on the specific application.

Fin: A thin projection on a forging resulting from trimming or from the metal under pressure being forced into hairline cracks in the die or around die inserts

Fin Stock: Coiled sheet or foil in specific alloys, tempers, an thickness ranges suitable for manufacture of fins for heat exchanger applications

final circuit: The final circuits in an electrical wiring system.

Final modulation (carrier wave of radio link transmitter). : Final modulation of a carrier

wave is modulation applied to the transmitted carrier. A transmitter may be modulated either directly by multiplex telephony or by signals for premodulation. There are two types of final modulation: amplitude modulation (from all or nothing in the case of pulses) and frequency modulation (or phase modulation).

Final order: A final ruling by FERC that terminates an action, decides some matter litigated by the petitioning parties, operates to some right, or completely disposes of the subject matter.

Financial Accounting Standards Board (FASB): An independent board responsible, since 1973, for establishing generally accepted accounting principles. Its official pronouncements are called "Statements of Financial Accounting Standards" and "Interpretations of Financial Accounting Standards."

financial attributes : Attributes that measure the financial health of the company. Key financial attributes include capital requirements, earnings per share of common equity, capitalization ratios, and interest coverage ratios.

Finery: A charcoal fueled hearth furnace used in early processes for converting cast iron to wrought iron by melting and oxidizing it in an air blast, then repeatedly oxidizing the product in the presence of a slag. The carbon oxidizes more rapidly than the iron so that a wrought iron of low carbon content is produced.

Finish: The surface appearance of steel after final treatment.

Finish Allowance: The amount of stock left on the surface of a casting, forging or mill products for machining.

Finish Mark: A symbol (f, f1, f2, etc.) appearing on the line of a drawing that represents the edge of the surface of the casting to be machined or otherwise finished.

Finish Welding: Production welding carried out in order to ensure the agreed quality of the casting.

Finished leaded gasoline: Contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Finished motor gasoline: See Motor gasoline (finished).

Finished Steel: Steel that is ready for the market without further work or treatment. Blooms, billets, slabs, sheet bars, and wire rods are termed semi finished produced by the in the line thermal treatment following electrodeposition.

Finishes: The surface appearance of the various metals after final treatment such as rolling, etc. Over the years the following finishes have become recognized as standard in their respective fields
ALUMINUM SHEET (A) Commercially Bright (B) Bright one side (C) Bright both sides
BLACK PLATE (A) Dull finish without luster produced by use of roughened rolls. (B) Bright finish ? a luster finish produced by use of rolls having a moderately smooth surface.
COLD ROLLED STEEL SHEETS (A) Commercial finish. A dull satin surface texture produced by roughened rolls (B) Commercial Bright Finish. Bright in appearance with a texture between luster and a very fine matte finish. (C) Luster Finish. Produced by use of ground and polished rolls. (Note: This is not a number 3 finish).
COLD ROLLED STRIP STEELS No. 1 Finish ? A dull finish produced without luster by rolling on roughened rolls. No. 2 Finish ? A regular bright finish produced by rolling on moderately bright rolls. No. 3 finish ? Best Bright Finish. A lustrous or high floss finish produced by

rolling on highly polished rolls. Also referred to as "Mirror Finish". COPPER BASE ALLOYS Acid Dipped ? Dry rolled finished. Produced by dry cold rolling bi chromate dipped alloy with polished rolls, resulting in a burnished appearance and retaining the color obtained by dipping(True Metal Color). Bright Dipped Finish ? Finish resulting from an acid dip. Buffed or Polished Surface ? a finish obtained by buffing, resulting in a high gloss or polished finish. Cold Rolled Finish ? A relatively smooth finish obtained by cold rolling plain pickled strip with a lubricant. Dry rolled Finish ? A burnished finish resulting from dry cold rolling by use of polished rolls without any metal lubricant Hot Rolled Finish ? A dark relatively rough oxidized finish resulting from rolling the metal while hot. May subsequently be pickled or bright dipped but the rough surface remains. Stretched Brushed Finish (Satin finish) Obtained by mechanically brushing with wire brushes or by buffing. FLAT WIRE No.2 Finish ? A regular bright finish. No.3 Finish ? Best Bright High Gloss finish produced by use of polished rolls. Or by special buffing ? this is a negotiated finish STAINLESS COLD ROLLED SHEET and STRIP NOS. 1,2B & 2D No.1 finish ? C.R. Annealed and pickled appearance varies from dull gray matte finish to a fairly reflective surface No.2B Finish ? Same as No.1 finish followed by a final light cold rolled pass generally on highly polished rolls. No.2D finish ? A dull cold rolled finish produced by cold rolling on dull rolls. STAINLESS C.R. SHEET ? Polished Finishes No.3 Finish ? This is an intermediate polished finish. No.4 Finish ? Ground and polished finish. No.6 Finish ? Ground, polished and Tampico Brushed. No.7 Finish ? Ground and High Luster Polished No.8 Finish ? Ground and polished to Mirror Finish. TEMPERED and UNTEMPERED COLD ROLLED CARBON SPRING STEEL STRIP Classified by description as follows: (A). Black Oil Tempered (B). Scaleless Tempered (C). Bright Tempered (D). Tempered and Polished (E). Tempered, Polished and Colored (Blue or Straw) TIN PLATE(A). Bright Hot Dipped Finish (B). Electro Matte Dull finish (C). Electro Bright Reflow Finish ? produced by the in the line thermal treatment following electrodeposition

Finishing Facilities: The portion of the steelmaking complex that processes semi finished steel (slabs or billets) into forms that can be used by others. Finishing operations can include rolling mills, pickle lines, tandem mills, annealing facilities, and temper mills.

Finishing Stand: The last stand in a rolling mill, which determines the surface finish and final gauge.

Finishing Temperature: The temperature at which hot working is completed.

Finite Difference Analysis (Fda): A computerized numerical modeling approach for solving differential equations. Used primarily in solving heat transfer and solidification problems.

Finite Element Analysis: A computerized numerical analysis technique used for solving differential equations to primarily solved mechanical engineering problems relating to stress analysis.

Finmet: The process reduces iron ore fines with gas in a descending series of fluidized bed reactors. The reduced iron is hot briquetted.

Finned Tube Heat Exchangers: A heat exchanger is any type of device used to transfer heat from between mediums. In a finned tube heat exchanger, the exhaust fluid that must be heated or cooled is circulated through a series of tubes mounted into a shell. Air or a second fluid is then circulated through the shell on the outside of the tube bundle to transfer heat to or from the tubes. Fins are placed longitudinally along the shell to increase the surface area and

improve the heat transfer capabilities. Design of finned tube heat exchangers is very specific to the application and takes into account the amount of heat that must be transferred, the flow rate required both inside and outside the tubes, the diameter, thickness and length of the tubes, and the layout of the tube bundles and fins.

Fire Barrier Wall: A wall separating buildings or subdividing a building to prevent the spread of fire and having a fire resistance rating and structural stability.

Fire control radar. : A radar for the continuous tracking of a selected target to provide accurate positional data for the purpose of directing weapons.

Fire Cracks: An irregular pattern of lines on the surface of a sheet caused by rolling with a fire cracked roll. Fire cracks will develop when a roll is not properly cooled.

Fire Dampers: Fire dampers are components installed in heating, ventilation, and air conditioning (HVAC) systems to prevent the system ductwork from spreading a fire from one area of a building to another. Fire dampers are typically a sheet of metal fins that drop into place to seal off a duct in the event of a fire. The dampers can be passive, dropping into place when the heat of the fire causes a retaining clip to melt, or active, controlled by an automatic fire safety system in which sensors and control systems are used to detect a fire and close the dampers.

Fire Detection Alarm Systems: A fire detection alarm system is designed to monitor an environment for heat build-up, smoke, or chemicals such as carbon monoxide generated in the event of a fire. A fire detection system includes a network of sensors wired together to provide distributed coverage around the entire building. Each sensor either contains a self-contained alarm unit or feeds a signal back to a central processing unit that sends a signal to all the alarms throughout the building. A fire detection system may also include manual alert stations, enabling people in the building to activate the fire alarm system prior to automatic detection.

Fire loading: The amount of combustibles present in a given area, expressed in Btu/ft² (kJ/m²).

Fire point: The lowest temperature at which a liquid in an open container will give off sufficient vapors to burn once ignited. It generally is slightly above the flash point.

Fire protection rating: The time, in minutes or hours, that materials and assemblies used as opening protection have withstood a fire exposure as established in accordance with test procedures of NFPA 252, Standard Methods of Fire Tests of Door Assemblies, and NFPA 257, Standard on Fire Test for Window and Glass Block assemblies, as applicable.

Fire support coordination centre. : A single location in which are centralized communications facilities and personnel incident to the coordination of all forms of fire support.

Fire Suppression Equipment: Fire suppression equipment can include manual components used by firefighters or automatic systems used in conjunction with automatic fire detection systems. Fire suppression can be accomplished with water supplied through pump and hose systems or sprinkler systems. In environments where the use of water is undesirable, such as facilities containing extensive electronic and computer equipment, fire suppression may be done with compressed gases such as argon or with chemical agents sprayed or spread on the fire.

Firestop: A material or device installed in a cable pathway to prevent the passage of flames,

smoke and gases

Firewall. : A specific type of boundary protection device (bpd), being a software application or a cis system that acts as a security barrier between two network segments and mediates access between those two networks according to an approved set of rules (ca).

FireWire: it is serial bus for high-speed communications and isochronous real-time data transfer.

Firing Model: the furnace, the ECA, and the Cycle Number. The system determines the furnace type, base type, heat hours, cool hours, uncover temperature, and gas stream.

Firm: An association, company, corporation, estate, individual, joint venture, partnership, sole proprietorship, or any other entity, however organized, including (a) charitable or educational institutions; (b) the Federal Government, including corporations, departments, federal agencies and other instrumentalities; and (c) state and local governments.

firm energy : Power or power-producing capacity covered by a commitment to be available at all times during the period.

Firm power: Power or power-producing capacity, intended to be available at all times during the period covered by a guaranteed commitment to deliver, even under adverse conditions.

Firmware. : A computer program or software stored permanently in prom or rom or semi-permanently in eprom or eeprom.

First purchase (of crude oil): An equity (not custody) transaction commonly associated with the transfer of ownership of crude oil coupled with the physical removal of the crude oil from a property (lease) for the first time. A first purchase normally occurs at the time and place of ownership transfer where the crude oil volume sold is measured and recorded on a run ticket or other similar physical evidence of purchase. The reported price is the first purchase average cost paid by the purchaser, allowing for any adjustments (deductions or premiums) passed on to the producer or royalty owner.

First purchase price: The price for domestic crude oil reported by the company that owns the crude oil the first time it is removed from the lease boundary.

First purchaser: A firm that acquires ownership of domestic crude oil by a first purchase transaction. Physical custody of the crude oil is not a prerequisite. In the case of multiple owners, only one firm should report to avoid double-counting.

First-In-First-Out(FIFO): Memory buffer in which the first data stored is the first data sent.

Fiscal year: The U.S. Government's fiscal year runs from October 1 through September 30. The fiscal year is designated by the calendar year in which it ends; e.g., fiscal year 2002 begins on October 1, 2001 and ends on September 30, 2002

Fish Eyes: A coating defect consisting of the undissolved particles in the coating usually surrounded by a circular crater. The particles are usually resinous and are raised up from the cured surface with the appearance of the eye of a fish.

Fish Mouthing:

Fishtail: A common name for the center gage. It is used to set thread cutting tools and has scales on it for determining the number of threads per inch.

Fissile (of an isotope): Capable of capturing a slow (thermal) neutron and undergoing nuclear fission, e.g., U-235, U-233, Pu-239.

Fissile material: Material that can be caused to undergo atomic fission when bombarded by neutrons. The most important fissionable materials are uranium-235, plutonium-239, and

uranium-233.

fissile material: Isotopes which are capable of undergoing nuclear fission. Sometimes the term is restricted to apply only to isotopes which are capable of undergoing fission upon impact with a slow neutron.

Fission: The process whereby an atomic nucleus of appropriate type, after capturing a neutron, splits into (generally) two nuclei of lighter elements, with the release of substantial amounts of energy and two or more neutrons.

Fission: The splitting of a heavy nucleus into two, accompanied by the release of a relatively large amount of energy and usually one or more neutrons. It may be spontaneous but usually is due to a nucleus absorbing a neutron and thus becoming unstable.

Fission products: Daughter nuclei resulting either from the fission of heavy elements such as uranium, or the radioactive decay of those primary daughters. Usually highly radioactive.

fission products : Both stable and unstable isotopes produced as a result of nuclear fission.

Fissionable (of an isotope): Capable of undergoing fission If fissile, by slow neutrons; if fertile, by fast neutrons.

Fitting: A mechanical device used to attach two pieces of tubing/ piping together or to attach a piece of tubing/pipe to a component.

Fixed asset turnover: A ratio of revenue to fixed assets which is a measure of the productivity and efficiency of property, plant, and equipment in generating revenue. A high turnover reflects positively on the entity's ability to utilize properly its fixed assets in business operations.

Fixed assets: Tangible property used in the operations of an entity, but not expected to be consumed or converted into cash in the ordinary course of events. With a life in excess of one year, not intended for resale to customers, and subject to depreciation (with the exception of land), they are usually referred to as property, plant, and equipment.

Fixed Capacitor Bank: A capacitor bank installed with no automatic switching device. The bank is manually switched on and off. Also see "Capacitor Bank".

Fixed carbon: The nonvolatile matter in coal minus the ash. Fixed carbon is the solid residue other than ash obtained by prescribed methods of destructive distillation of a coal. Fixed carbon is the part of the total carbon that remains when coal is heated in a closed vessel until all matter is driven off.

Fixed charge coverage: The ratio of earnings available to pay so-called fixed charges to such fixed charges. Fixed charges include interest on funded debt, including leases, plus the related amortizations of debt discount, premium, and expense. Earnings available for fixed charges may be computed before or after deducting income taxes. Occasionally credits for the "allowance for funds used during construction" are excluded from the earnings figures. The precise procedures followed in calculating fixed charges or interest coverages vary widely.

Fixed cost (expense): An expenditure or expense that does not vary with volume level of activity.

fixed cost : The annual (or sometimes monthly) costs associated with the ownership of property such as depreciation, taxes, insurance, and the cost of capital.

fixed equipment: Equipment designed to be fastened to a support or otherwise secured in a specific location.

Fixed operating costs: Costs other than those associated with capital investment that do not vary with the operation, such as maintenance and payroll.

Fixture: A production work holding device used for machining duplicate workpieces. Although the term is used interchangeably with jig, a fixture is not designed to guide the cutting tools as the jig does.

Fixture: With regard to lighting, a reference to Luminaire.

Flag: A marker inserted adjacent to the edge at a splice or lap in a roll or foil

Flags, alphabet. : Flags used on an international basis in visual communications to represent the letters of the alphabet.

Flags, numeral. : Flags used in visual communications to represent numerals 0 through 9.

Flakes: Short discontinuous internal fissures in ferrous metals attributed to stresses produced by localized transformation and decreased solubility of hydrogen during cooling after hot working. In a fractured surface, flakes appear as bright silvery areas; on an etched surface they appear as short discontinuous cracks. Also called shatter cracks and snowflakes.

Flaking: A condition in coated sheet where portions of the coating become loosened due to inadequate adhesion

flame: Glowing mass of gas produced during combustion.

Flame Annealing: Annealing in which the heat is applied directly by a flame.

Flame Resistance: The ability of insulation or jacketing material to resist the support and conveyance of fire.

Flameproof Cable Boxes: Flameproof cable boxes are specialized electrical junction boxes designed to resist damage in the event of a fire. These boxes are typically tightly sealed, with special connectors for the incoming wires that eliminate access of air and fire into the box and the attached wires.

Flameproof Cable Connectors: Flameproof cable connectors are specialized connectors used in conjunction with flameproof cable boxes. The connectors are designed to be air-tight to eliminate access of air and fire into the junction box and the attached wires.

Flammable liquid: Any liquid having a flash point below 100°F (37.8°C) and having a vapor pressure not exceeding an absolute pressure of 40 psi (276 kPa) at 100°F (37.8°C).

Flange Adapter: A flange is a lip, plate, or rim attached to a component to provide a bearing surface and the ability to make a mechanical connection to another part. A flange adapter is a connector with a flange, often used to make a connection in piping systems. The use of flange adapters is widespread across many different industries and applications; therefore, many different designs exist specific to the application of the adapter.

Flange Mounted Gearboxes: A gearbox is a transmission device that uses gears to transfer speed and torque from a rotating component to another component. Flange mounted gearboxes are used when the flange is necessary for mounting of the gearbox and the removal of significant loads generated from the force transmission process.

Flanged Hoses: Flanged hoses are specially designed hoses that are terminated with a mounting plate, the flange, on the end. The flange is used to provide a connection point to other hoses or equipment and to carry any mechanical stresses present in the system. Flanged hoses are used in many different applications, resulting in a wide variety of designs, sizes, and material choices.

Flanged Inlet: A plug which is intended for flush mounting on an appliance or equipment and

which serves to connect utilization equipment to a cord connector.

Flanged Outlet: A receptacle which is intended for flush mounting on an appliance or equipment which is intended to establish electrical connection with an inserted plug.

Flanged Receptacle: A receptacle which is intended for flush mounting on an appliance or on equipment which is intended to establish electrical connection with an inserted plug.

Flank communications. : See lateral communications.

Flapper Valve Steel: An extremely flat, very smooth, very accurate to gage, polished, hardened and tempered spring steel produced from approximately 1.15 carbon. The name is derived from its common and principle usage.

Flare: A tall stack equipped with burners used as a safety device at wellheads, refining facilities, gas processing plants, and chemical plants. Flares are used for the combustion and disposal of combustible gases. The gases are piped to a remote, usually elevated, location and burned in an open flame in the open air using a specially designed burner tip, auxiliary fuel, and steam or air. Combustible gases are flared most often due to emergency relief, overpressure, process upsets, startups, shutdowns, and other operational safety reasons.

Natural gas that is uneconomical for sale is also flared. Often natural gas is flared as a result of the unavailability of a method for transporting such gas to markets.

Flare Test: A test applied to tubing, involving a tapered expansion over a cone. Similar to pin expansion test.

Flared natural gas: See flare.

Flares. : In electronic warfare, an infra-red decoy device used to deceive infra-red homing weapons.

Flash ADC: High-speed ADC whose output code is determined in a single step by a bank of comparators and encoding logic.

Flash Extension: The amount of metal extending beyond the part at the flash line.

Flash Hazard: A study investigating a worker's potential exposure to arcflash energy, conducted for the purpose of injury prevention, the determination of safe work practices, and the appropriate levels of PPE.

Flash Hazard Analysis: A dangerous condition associated with the release of energy caused by an electric arc.

Flash Line: A line left on a forging where flash has been removed

flash point: The lowest temperature at which a substance gives off sufficient inflammable vapour to produce a momentary flash when a small flame is applied.

Flash Protection Boundary: An approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.

Flash Stain: A stain that occurs in the rinse tanks when the line has stopped. It appears blue, green, or black.

Flash Suit: A complete FR clothing and equipment system that covers the entire body, except for the hands and feet. This includes pants, jacket, and beekeeper type hood fitted with a face shield.

Flash Tank: Where blow down is converted to water for feed water and steam for the plant header.

Flash Welding: A resistance butt welding process in which the weld is produced over the entire abutting surface by pressure and heat, the heat being produced by electric arcs between

the members being welded.

Flash. : See precedence designations.

Flashburn: A defect made by contact rolls when an arc is passed through the strip. Generally on lighter baseweight. (D.R. coils)

Flashless: A coating defect consisting of the uneven, random distribution of a coating on coated substrate. A variation in the color of a coating which is due to variations of the Film weight. A coating defect consisting of the flame weight fluctuation is caused by disproportionate amount of coating transferring from the application roll.

Flashover: An unintended electrical discharge to ground or another phase. Flashovers can occur between two conductors, across insulators to ground or equipment bushings to ground.

flashover: Arcing that is caused by the high voltage breakdown of insulation between two conductors, resulting in high current.

Flashover: The temperature or heat at which is flammable material can be burnt very easily due to an intention electric arc.

Flask: A metal frame used for making or holding a sand mold. The upper part is the cope and the bottom half is the drag.

Flask Bar: A reinforcing member attached within either half of a flask to assist in holding the rammed sand in position.

Flask Clamp: A device for holding together the cope, drag, and cheek of a flask.

Flask Pin Guides: Guides used to accurately align the match plate pattern in the flask and flask to flask location.

Flat and meter rate schedule: An electric rate schedule consisting of two components, the first of which is a service charge and the second a price for the energy consumed.

Flat Back: A pattern with a flat surface at the joint of the mold. It lies wholly within the drag and the joint of the cope is a plane surface.

Flat Band: A band with location marks used to position a coil on reel.

Flat Belt : Coil that has collapsed center.

Flat Conductor: A wire manufactured in a flattened form as opposed to round, or square, conductors.

Flat demand rate schedule: An electric rate schedule based on billing demand that provides no charge for energy.

Flat Die Forging: Forging worked between flat or simple contour dies by repeated strokes and manipulation of the workpiece. Also known as ?hand? or ?smith? forging.

Flat Latch Needle Steel: Supplied cold rolled and annealed. Carbon content .85. Supplied both in coil and flat length. Used to make flat latch needles which are used in the manufacture of knitted goods.

Flat plate pumped: A medium-temperature solar thermal collector that typically consists of a metal frame, glazing, absorbers (usually metal), and insulation and that uses a pumped liquid as the heat-transfer medium predominant use is in water-heating applications.

flat rate : A fixed charge for goods and services that does not vary with changes in the amount used, volume consumed, or units purchased.

Flat Rolled Steel: Steel produced on rolling mills utilizing relatively smooth, cylindrical rolls. The width to thickness ratio of flat rolled products is usually fairly large. Examples of flat rolled steel are hot rolled, cold rolled, and coated sheets and coils, tin mill products, etc.

Flat Wire: A flat Cold Rolled, prepared edge section up to 1 1/4 wide, rectangular in shape. Generally produced from hot rolled rods or specially prepared round wire by one or more cold rolling operations, primarily for the purpose of obtaining the size and section desired. May also be produced by slitting cold rolled flat metal to desired with followed by edge dressing.

Flatness: (1) For rolled products, a distortion of the surface of sheet such as a bulge or a wave, usually transverse to the direction of rolling. Often described by location across width, i.e., edge buckle, quarter buckle, center buckle, etc. (2) For extrusions, flatness (off contour) pertains to the deviation of a cross section surface intended to be flat. Flatness can be affected by conditions such as die performance, thermal effects and stretching

Flat-plate Photovoltaic: Refers to a Photovoltaic array or module that consists of non-concentrating elements. Flat-plate arrays and modules use direct and diffuse sunlight, but if the array is fixed in position, some portion of the direct sunlight is lost because of oblique sun-angles in relation to the array.

Flat-plate photovoltaic module: An arrangement of photovoltaic cells mounted on a rigid flat surface with the cells exposed freely to incoming sunlight.

FLD: Full length drift (as opposed to ?end drift?) ? usually performed as part of used tubing or casing (OCTG) inspection

Fleet vehicle: Any motor vehicle a company owns or leases that is in the normal operations of a company. Vehicles which are used in the normal operation of a company, but are owned by company employees are not fleet vehicles. If a company provides services in addition to providing natural gas, only those vehicles that are used by the natural gas provider portion of a company should be counted as fleet vehicles. Vehicles that are considered "off-road" (e.g., farm or construction vehicles) or demonstration vehicles are not to be counted as fleet vehicles. Fleet vehicles include gasoline/diesel powered vehicles and alternative-fuel vehicles.

fleming's rules: If the forefinger, second finger, and thumb of the right hand are extended at right angles to each other, the forefinger indicates the direction of flux, the second finger the direction of the emf and the thumb the direction of the motion in an electric generator. If the left hand is used, the fingers indicate the conditions for an electric motor.

Flex Life: Ability of a conductor, wire or cable to withstand repeated bending.

flexible cable : A cable whose structure and materials make it suitable to be flexed while in service.

Flexible Conveyor: A flexible conveyor is specialized type of conveyor system in which the support rails are designed to allow for extension and making variable bends in order to position the conveyer system around obstacles. The conveyer typically uses metal or plastic rollers fastened to a flexible chain the drives the conveyor.

flexible cord : A flexible cable in which the cross sectional area of each conductor does not exceed 4 mm².

Flexible fuel vehicle: A vehicle that can operate on

Flexible Heating Elements: Flexible heating elements include any heating component capable of conforming to the surface it is heating. Flexible heating elements come in a variety of shapes and sizes, from thermal blankets, to thin film heaters, to silicon tubes used in floor heating applications.

flexible load shape : The ability to modify the utility's load shape on short notice. When

resources are insufficient to meet load requirements, load shifting or peak clipping may be appropriate.

Flexible Metallic Hoses: Flexible metallic hoses comes in a number of different types including corrugated thin walled tubing, helical coiled tubing, or braided hoses made of a metal fiber sheath. Flexible metal hoses are used as piping or tubing in applications requiring expansion due to heat or pressure or in installations that allow for misalignments or require flexibility for installation, operation or maintenance. Flexible hoses can be manufactured from many of the standard metals and alloys including bronze, aluminum, stainless steel, inconel, monel and other alloys.

flexible retail pool : a model for the restructured electric industry that features an Independent System Operator (ISO) operating in parallel with a commercial Power Exchange, which allows end-use consumers to buy from a spot market or "pool" or to contract directly with a particular supplier.

Flexible Screw Conveyors: A screw conveyor moves solid or liquid material by moving it on the threads of the screw. The screw is usually located in either a trough or tube and is oriented at a slight incline or vertically. As the screw rotates, material clings to the screw surface and is transported up the shaft. The pitch of the screw - the linear distance it takes to complete one complete revolution around the shaft - determines how slowly or quickly the material progresses from one end to the next at a given shaft speed. In a flexible screw conveyor, the screw is manufactured from a flexible material. The advantage provided by a flexible screw is that it automatically self-centers within the tube, providing clearance between the screw and tube wall. As a result, the material being transported by the screw is less likely to get caught and damaged between the screw and the wall.

Flexible Stainless Steel Pipe: Flexible stainless steel pipe is typically made of corrugated or braided stainless steel in order to provide enhanced flexibility and pipe expansion properties. It is used frequently in HVAC and other piping applications to transport liquids and gases.

flexible wiring system: A wiring system designed to provide mechanical flexibility in use without degradation of the electrical components.

Flexicoking: Flexible fuel vehicles have a single fuel system to handle alternative and petroleum-based fuels.

Flexicoking: . A thermal cracking process which converts heavy hydrocarbons such as crude oil, tar sands bitumen, and distillation residues into light hydrocarbons. Feedstocks can be any pumpable hydrocarbons including those containing high concentrations of sulfur and metals.

flip flop: A memory device capable of storing a logic level.

Float Charge: A continuous low rate charge that compensates for the self discharge rate of a battery. Also known as Trickle Charge.

Float charge: Float charge is the voltage required to counteract the self-discharge of the battery at a certain temperature.

Float Charge (Battery)MTI: A method of maintaining a cell or battery in a charged condition by continuous, longterm, constant voltage charging at a level sufficient to balance selfdischarge.

Float life: Number of years that a battery can keep its stated capacity when it is kept at float charge (see float charge).

Float Switches: A float switch is a mechanical device that floats on the surface of a liquid in a

reservoir or tank. The float switch is used to monitor the level of the fluid and trigger an event, such as a refill operation, when the liquid reaches one or more predetermined levels. Depending on the application, float switches can be very simple or complex with multiple settings and operations.

Float Valves: A float valve, also known as a ballcock, is a mechanical device used to monitor the amount of water in a tank. The float is attached to a lever arm that is in turn attached to a valve that controls the flow of water into the tank. When the water in the tank reaches a certain level, the float moves the arm such that it closes the input valve. Float valves are most commonly used in flush toilets.

Floating Aerators: Floating aerators are mechanical devices used to promote oxidation and mixing in retention ponds and basins associated with wastewater treatment facilities. The floating aerators sit on the surface of the water, drawing air from the atmosphere and delivering it into the pond where it promotes biologic oxidation of the wastewater. The process of injecting the air into the pond also effectively mixes the water, helping to improve the efficiency of the pond treatment process.

Float-zone process: A method of growing a large-size, high-quality crystal whereby coils heat a polycrystalline ingot placed atop a single-crystal seed. As the coils are slowly raised the molten interface beneath the coils becomes single crystal.

Flocculants: Flocculants are chemicals used in water treatment operations to help separate suspended solids from water. Flocculants are used to help bind dispersed solids into larger clumps. The resulting clumps then become large enough to settle or be removed from the water through filtration, straining, or floatation. While flocculants are often used in wastewater treatment operations, they can also be used to capture and remove microparticles from swimming pools and drinking water. There are a number of different chemicals, polymers and natural products used as flocculants, depending on the application.

Flocculation: A coating defect consisting of the formation of clusters of particles separable by relatively weak mechanical forces, or by a change in the physical forces at the interface between the liquid and the dispersed particles.

Flock Dosing System: A flock dosing system is a controlled pumping system designed to deliver doses of flock, or flocculants, in measured amounts and at regular intervals. Flocculants are chemicals used in water treatment operations to help separate suspended solids from water. Flocculants are used to help bind dispersed solids into larger clumps. The resulting clumps then become large enough to settle or be removed from the water through filtration, straining, or floatation. While flocculants are often used in wastewater treatment operations, they can also be used to capture and remove microparticles from swimming pools and drinking water. There are a number of different chemicals, polymers and natural products used as flocculants, depending on the application.

Flooded Cell: A cell design that incorporates an excess amount of electrolyte.

Floor (coal): The upper surface of the stratum underlying a coal seam. In coals that were formed in persistent swamp environments, the floor is typically a bed of clay, known as "underclay," representing the soil in which the trees or other coal-forming swamp vegetation was rooted.

Floor Grating: Floor grating is a term used to describe flooring panels or tiles, typically made of metal, that are used to provide drainage access. Floor grating can be manufactured

from perforated metal panels, wire mesh, or welded metal bar stock, in addition to other options. Floor grating is often set into recessed troughs in order to maintain a level floor surface while providing access to the drainage area. Floor grating may also include anti-slip surfaces or coatings for safety purposes.

Floor Plate: Usually carbon (but also alloy and stainless) steel plate rolled with raised lug patterns to provide traction for feet and wheels; as the name suggests, used widely for flooring.

Floor price: A price specified in a market-price contract as the lowest purchase price of the uranium, even if the market price falls below the specified price. The floor price may be related to the seller's production costs.

Floor Receptacle: a receptacle with a protective cover plate intended for mounting flush with the surface of the floor.

Floor Scales: Floor scales are weight measurement devices designed to sit on the floor, often in industrial and commercial facilities. Floor scales may be designed for small package size application or for much larger-scale measurement needs. They are commonly used in production and shipping facilities.

Floor space: The area enclosed by exterior walls of a building, including parking areas, basements, or other floors belowground level. It is measured in square feet.

Floor, wall, or pipeless furnace: Space-heating equipment consisting of a ductless combustor or resistance unit, having an enclosed chamber where fuel is burned or where electrical-resistance heat is generated to warm the rooms of a building. A floor furnace is located below the floor and delivers heated air to the room immediately above or (if under a partition) to the room on each side. A wall furnace is installed in a partition or in an outside wall and delivers heated air to the rooms on one or both sides of the wall. A pipeless furnace is installed in a basement and delivers heated air through a large register in the floor of the room or hallway immediately above.

floppy disk : Flexible magnetic disk used for mass storage.

Flow control: The laws, regulations, and economic incentives or disincentives used by waste managers to direct waste generated in a specific geographic area to a designated landfill, recycling, or waste-to-energy facility.

Flow Control Valve: A valve that is adjusted to allow oil to move through it at a predetermined rate.

flow control. : The procedure for controlling the transfer of messages or characters between 2 points in a data network - such as between a protocol converter and a printer - to prevent loss of data when the receiving device's buffer begins to reach its capacity

Flow Divider: A mechanical device used to divide the fluid in a passage into two or more separate fluid streams.

Flow Indicators: A flow indicator is a device used to measure the flow rate of a liquid or gas in a piping system. A flow indicator may provide a wide range of functions, from simply indicating if flow is present to measuring the flow speed, mass flow, or volumetric flow rate of the fluid or gas. Because of the wide range of flow applications, there are many different types of flow indicators.

Flow Line: (1) Texture showing the direction of metal flow during hot or cold working. Flow lines often can be revealed by etching the surface or a section of a metal part. (2) In

mechanical metallurgy, paths followed by volume elements of metal during deformation.

Flow Loggers: A flow logger, also known as a flow meter, is a measurement device used to measure and record the flow rate of a fluid or gas in a system. Depending on the design and application, a flow logger may record flow speed, mass flow rate, or volumetric flow rate.

Flow Marks A Coating: A coating defect consisting of the poor flow out of the coating on the substrate causing a ribbed (ribbing) or ridged appearance.

Flow Meters: A flow meter, also known as a flow logger, is a measurement device used to measure and record the flow rate of a fluid or gas in a system. Depending on the design and application, a flow logger may record flow speed, mass flow rate, or volumetric flow rate.

Flow Off (Pop Off): A large vent, usually located at the high of the mold cavity. In addition to letting air and mold gases escape as metal fills the mold cavity, the flow off fills with metal and acts to relieve the surge of pressure near the end of the pouring.

Flow Rate: The volume mass, or weight of a fluid passing through any conductor per unit of time.

Flow Stress: The shear stress required to cause plastic deformation of solid metals.

Flow Switch: A digital device that opens or closes a contact when a preset flow passes over the sensing element. Normally mounted in a fluid flow passage with a paddle or wand perpendicular to the fluid stream.

Flow Through: A forging defect caused when metal flows past the base of a rib resulting in rupture of the grain structure.

Flower Pot: Slang for "Universal Bushing Well".

Flowlines: Always visible to a greater or less degree when a longitudinal section has been subjected to Macro etching, indicating the direction of working or rolling.

Flowmeter: An analog device, which indicates the volume of fluid passing through its interior, passage. The output signal may be a visual one or a low level electrical signal.

fluctuation: A surge or sag in voltage amplitude, often caused by load switching or fault clearing.

Flue: An enclosed passage way for directing products of combustion to the atmosphere.

Flue Gas Analyzer: A flue gas analyzer is used to measure and monitor toxic gases in the exhaust pipe of furnaces, fireplaces, or other heat productions devices. In these devices, carbon monoxide and other hazardous chemicals are produced during the combustion process and the probe from the flue gas analyzer is used to detect and measure the concentration of these chemicals. The concentration of chemicals in the flue can also be used to provide information on the efficiency of the combustion process.

Flue gas desulfurization: Equipment used to remove sulfur oxides from the combustion gases of a boiler plant before discharge to the atmosphere. Also referred to as scrubbers. Chemicals such as lime are used as scrubbing media.

Flue-gas desulfurization unit (scrubber): Equipment used to remove sulfur oxides from the combustion gases of a boiler plant before discharge to the atmosphere. Chemicals such as lime are used as the scrubbing media.

Flue-gas particulate collector: Equipment used to remove fly ash from the combustion gases of a boiler plant before discharge to the atmosphere. Particulate collectors include electrostatic precipitators, mechanical collectors (cyclones), fabric filters (baghouses), and wet scrubbers.

Fluid: A media used in a fluid power system for transfer of energy (work).

Fluid catalytic cracking: The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Fluid Coking: . A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fluid coking: A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fluid Drive Couplings: A fluid drive coupling is a special type of coupling commonly found in power transmission systems to transfer torque from one component to another. Rather than a mechanical coupling that connect two shafts, a pair of rotating blade rows is used. The rotating blade set on one shaft acts as a pump and turns the fluid. The rotating fluid then turns the turbine - the rotating blade row attached to the second shaft, thereby transmitting the torque by means of the fluid. Due to friction losses in the blades, a fluid coupling is not 100% efficient.

Fluid Friction: The measure of the resistance of flow of fluid in a passage, measured in psi (pounds per square inch) or other measures of pressure.

Fluid Motor: A mechanical device that transforms the flow of pressurized fluid into rotary motion.

Fluid Power System: The term used to describe a system of components that use a pressurized fluid to transfer energy (do work).

Fluidize: To impart fluid like properties to powders or sands e.g. fluidized beds.

Fluidized-bed combustion: A method of burning particulate fuel, such as coal, in which the amount of air required for combustion far exceeds that found in conventional burners. The fuel particles are continually fed into a bed of mineral ash in the proportions of 1 part fuel to 200 parts ash, while a flow of air passes up through the bed, causing it to act like a turbulent fluid.

fluorescence: property of many substances, of absorbing light of one wavelength (or colour) and emitting light of another wavelength (or colour).

Fluorescent lamp: A glass enclosure in which light is produced when electricity is passed through mercury vapor inside the enclosure. The electricity creates a radiation discharge that strikes a coating on the inside surface of the enclosure, causing the coating to glow. Note Traditional fluorescent lamps are usually straight or circular white glass tubes used in fixtures specially designed for them. A newer type of fluorescent lamp, the compact fluorescent lamp, takes up much less room, comes in many differently-shaped configurations, and is designed to be used in some fixtures originally intended to house in candescent lamps.

Fluorescent Lamp: A low pressure Mercury, electric discharge lamp in which a fluorescing coating (Phosphor) transforms some of the ultraviolet energy generated by the discharge into light.

fluorescent lamp: Discharge lamp of the low-pressure mercury type in which most of the light is emitted by a layer of fluorescent material excited by the ultraviolet radiation from the discharge.

Fluorescent Lamp: the lamp which produce the light by fluorescence and low pressure

mercury vapor gas .

Fluorescent Lamp: A glass housing that contains phosphorus in a sealed vacuum. When the phosphorus is excited from a voltage charge it becomes ionized and gives off light.

Fluorescent light bulbs: These are usually long, narrow, white tubes made of glass coated on the inside with fluorescent material, which is connected to a fixture at both ends of the light bulb; some are circular tubes. The light bulb produces light by passing electricity through mercury vapor, which causes the fluorescent coating to glow or fluoresce.

Fluorescent lighting other than compact fluorescent bulbs: In fluorescent lamps, energy is converted to light by using an electric charge to "excite" gaseous atoms within a fluorescent tube. Common types are "cool white," "warm white," etc. Special energy efficient fluorescent lights have been developed that produce the same amount of light while consuming less energy. Note for definition of compact fluorescent bulbs, go to compact fluorescent bulbs.

Fluorescent Starter: A device rated in watts having a voltage-sensitive switch and a capacitor whose function is to provide a high voltage pulse to start a fluorescent lamp.

Flush Joint: Connection with male and female threads cut directly in pipe (as opposed to T&C). This provides the same ID clearance as in the middle of the tube, once lengths are joined.

Flush Wall Plate: A wall plate designed to mount flush with the wall surface or the plane surface of electrical equipment.

Flute: The groove in a cutting tool which provides a cutting edge and a space for the chips to escape and permits the cutting fluids to reach the cutting edges.

Fluting: 1) Visible line markings that sometimes appear on the surface of flat rolled products during forming; associated with non uniform yielding of the metal; occurs when the steel is formed into cylindrical or arc shaped parts. 2) The kinking, or breaking of a sheet generally caused by curling the sheet on two small diameters. Fluting, or paneling as it is often called, can be avoided by working the steel before bending. Steel with a definite yield point (a visible break in the stress strain curve) will generally tend to flute.

Flux: Generally refers to a magnetic line of force but may also describe an electric line of force.

Flux: (a) A material that helps produce fusion, as solder flux. (b) A continuous flowing or passing, as in the field created by a magnet.

flux linkage: The linking of the magnetic flux with the conductors of a coil. The value obtained by multiplying the number of turns in the coil by the flux passing through the coil.

Flux material: A substance used to promote fusion, e.g., of metals or minerals.

fluxmeter: An instrument for the measurement of magnetic flux.

Fly ash: Particulate matter mainly from coal ash in which the particle diameter is less than 1×10^{-4} meter. This ash is removed from the flue gas using flue gas particulate collectors such as fabric filters and electrostatic precipitators.

Fly Cutter: A single point cutter mounted on a bar in a fly cutter holder or a fly cutter arbor. Used for special applications for which a milling cutter is not available.

Flying Shear: A shear which severs steel as the piece continues to move. In continuous mills, the piece being rolled cannot be stopped for the shearing operation, so the shear knives must move with it until it is severed.

Fm, frequency modulation. : One of 3 basic ways (see also am and phase modulation) to add

information to a sine wave signal: the frequency of the sine wave, or carrier, is modified in accordance with the information to be transmitted.

FME: Free Market Economies. Countries that are members of the Council for Mutual Economic Assistance (CMEA) are not included.

Foam Adhesive: Foam adhesive is a compound often used in construction for the purpose of joining one material to another. Foam adhesives are usually polymer compounds such as a polyurethane, providing strong adhesion, water resistance, and the ability to join many different materials together.

FOB: Free on Board. The point at which liability transfers from buyer to seller.

focus: A control that converges beams to produce a sharp display.

Focusable Diffuse: A diffuse reflective photoelectric sensor that either allows the optical axis of the emitter and receiver to be adjusted to a focal point or it utilizes an aperture to focus on an area in front of the sensor.

Foil: A rolled product rectangular in cross section of thickness less than 0.006 inch. In Europe, foil is equal to and less than 0.20 mm

Folds: Defects caused in metal by continued fabrication of overlapping surfaces.

Follower Rest: A support for long, slender work turned in the lathe. It is mounted on the carriage, travels close to and with the cutting tool and keeps the work from springing away.

foot (ft): Imperial unit of length. 1 foot = 12 inches = 304.8 mm exactly

foot candle : Unit of illumination at a point one foot distance from a one candela source. (in the imperial system of units) 1 foot candle = 1 lumen per square foot.

foot lambert: Unit of luminance. It is the luminance of a uniform diffuser emitting a foot candle.

foot pound (ft. lb.) : Unit of energy. 1 ft.lb. = 1.356 J

Footage drilled: Total footage for wells in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore that is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

Footage Of Coil: The length of the steel strip that makes up a coil.

Foot-candle: A foot-candle is a non-SI unit of luminance or light intensity

Foot-candle (fc): Standard unit of measure for illumination on a surface. The Average footcandle level on a square surface is equal to the lumens striking the surface, divided by the area of the surface.

Foot-candle (fc): A non-SI unit of illuminance or light intensity defined as the illuminance on a one-square foot surface of which there is a uniformly distributed flux of one lumen.

Footprint. : The area of the earth's surface, which is covered by a satellite's antenna. The size and shape of this area is determined by the altitude of the satellite and the width and shape of the satellite's beam. The footprint is also known as the cone of earth view.

Footstock: Part of an indexing attachment which has a center and serves the same purpose as the tail stock of a lathe.

Force Fit: A fitting which one part is forced pressed into another to form a single unit. There

are different classes of force fits depending on standard limits between mating parts.

Force Gauges: A force gauge is an instrumentation device designed to measure force. Force gauges can measure either compression (pushing) or tension (pulling) and come in many sizes and styles. A force gauge can be either a mechanical device that incorporates a spring or a digital instrument that makes use of an electronic load sensor.

force : External agency capable of altering the state of rest or motion of a body. [Unit newton or N]

Forced outage: The shutdown of a generating unit, transmission line, or other facility for emergency reasons or a condition in which the generating equipment is unavailable for load due to unanticipated breakdown.

forced outage : An outage that results from emergency conditions that requires a component to be taken out of service automatically or as soon as switching operations can be performed.

Force-Sense: To force the voltage at a remote point in a circuit for measurement.

Foreign access: Refers to proved reserves of crude, condensate, and natural gas liquids applicable to long-term supply agreements with foreign governments or authorities in which the company or one of its affiliates acts as producer.

Foreign currency transaction gains and losses: Gains or losses resulting from the effect of exchange rate changes on transactions denominated in currencies other than the functional currency (for example, a U.S. enterprise may borrow Swiss francs or a French subsidiary may have a receivable denominated in kroner from a Danish customer). Gains and losses on those foreign currency transactions are generally included in determining net income for the period in which exchange rates change unless the transaction hedges a foreign currency commitment or a net investment in a foreign entity. Intercompany transactions of a long-term investment nature are considered part of a parent's net investment and hence do not give rise to gains or losses.

Foreign currency translation effects: Gains or losses resulting from the process of expressing amounts denominated or measured in one currency in terms of another currency by use of the exchange rate between the two currencies. This process is generally required to consolidate the financial statements of foreign affiliates into the total company financial statements and to recognize the conversion of foreign currency or the settlement of a receivable or payable denominated in foreign currency at a rate different from that at which the item is recorded. Translation adjustments are not included in determining net income, but are disclosed as separate components of consolidated equity.

Foreign operations: These are operations that are located outside the United States.

Determination of whether an enterprise's mobile assets, such as offshore drilling rigs or ocean-going vessels, constitute foreign operations should depend on whether such assets are normally identified with operations located outside the United States.

Foreign-controlled firms (coal): Foreign-controlled firms are U.S. coal producers with more than 50 percent of their stock or assets owned by a foreign firm.

Forensic Failure Analysis: Forensic failure analysis is a process which which forensic science techniques to collect and analyze data related to a component or system failure.

Forge: To form or shape heated metal by hammering. Also, the name of the unit used for heating metal, such as the blacksmiths forge.

Forge Welding: Welding hot metal by applying pressure or blows.

Forgeability: The term used to describe the relative workability of forging material

Forging Billet: The term Forging Stock is preferred

Forging Ingot: A cast form intended and suitable for subsequent working by the forging process

Forging Plane: A reference plane or planes normal to the direction of applied force from which all draft angles are measured

Forging Quality: Term describing stock of sufficiently superior quality to make it suitable for commercially satisfactory forgings.

Forging Stock: A wrought or cast rod, bar or other section suitable for forging

form factor: Ratio of the rms value to the average value in a periodic waveform.

Form Factor: The ratio of the r.m.s. to the average value of a periodic wave.

Formability: The relative ease with which a metal can be shaped through plastic deformation.

Formal military message. : A formal military message is legally binding in civil and military law and is subject to formal release and commitment. In addition, other national laws, treaties, mous and bilateral agreements may apply when personnel are operating in other countries or messages cross international boundaries. Formal military messages using precedence, require guaranteed delivery and are handled within the hgm domain. (gbr)

Formed Cutters: Milling cutters which will produce shaped surfaces with a single cut and so designed that they may be sharpened without changing their outline or shape.

Forming Tool: Tool ground to a desired shape to reproduce this shape on the workpiece.

fortin barometer: A mercury in glass barometer, which used in conjunction with correction tables enables accurate measurement of atmospheric pressure to be made.

forward bias: A dc voltage applied to a pN junction semiconductor so that the positive terminal of the voltage source connects to the p-type material and the negative terminal to the N-type material. It produces forward current in the circuit.

Forward Converter: The DC to DC convertor transformer that use to step up or step down the output voltage and provide the galvanic isolation for the load

Forward cost (1): Forward costs are those operating and capital costs yet to be incurred at the time an estimate of reserves is made. Profits and "sunk" costs, such as past expenditures for property acquisition, exploration, and mine development, are not included. Therefore, the various forward-cost categories are independent of the market price at which uranium produced from the reserves would be sold.

Forward cost (2): The operating and capital costs still to be incurred in the production of uranium from in-place reserves. By using forward costing, estimates for reserves for ore deposits in differing geological settings and status of development can be aggregated and reported for selected cost categories. Included are costs for labor, materials, power and fuel, royalties, payroll taxes, insurance, and applicable general and administrative costs. Excluded from forward cost estimates are prior expenditures, if any, incurred for property acquisition, exploration, mine development, and mill construction, as well as income taxes, profit, and the cost of money. Forward costs are neither the full costs of production nor the market price at which the uranium, when produced, might be sold.

Forward costs (uranium): The operating and capital costs that will be incurred in any future production of uranium from in-place reserves. Included are costs for labor, materials, power and fuel, royalties, payroll taxes, insurance, and general and administrative costs that are

dependent upon the quantity of production and, thus, applicable as variable costs of production. Excluded from forward costs are prior expenditures, if any, incurred for property acquisition, exploration, mine development, and mill construction, as well as income taxes, profit, and the cost of money. Note By use of forward costing, estimates of reserves for ore deposits in differing geological settings can be aggregated and reported as the maximum amount that can theoretically be extracted to recover the specified costs of uranium oxide production under the listed forward cost categories.

Forward coverage: Amount of uranium required to assure uninterrupted operation of nuclear power plants.

forward current: Current in a circuit of a semiconductor device due to conduction by majority carriers across the pN junction.

Forward error correction (fec). : A system allowing detection and correction of an error without reference to the transmitting station.

Forward scatter. : The reflected radiation of electromagnetic energy away from the emitting source.

Fosp. : Fleet ocean surveillance product. The generic term for the communications that carry the information that makes up the recognised maritime picture (rmp). Software runs on outfit pdt.

Fossil fuel: An energy source formed in the Earth's crust from decayed organic material. The common fossil fuels are petroleum, coal, and natural gas.

Fossil fuel: A fuel based on carbon presumed to be originally from living matter, e.g., coal, oil, gas. Burned with oxygen to yield energy, used in a boiler to produce steam for the generation of electrical energy.

Fossil fuel electric generation: Electric generation in which the prime mover is an internal combustion engine or a turbine rotated by high-pressure steam produced in a boiler or by a hot exhaust gas produced from the burning of fossil fuels.

Fossil fuel plant: A plant using coal, petroleum, or gas as its source of energy.

fossil fuel plant: A plant using coal, oil, gas and other fossil fuel as its source of energy.

Fossil fuel steam-electric power plant: An electricity generation plant in which the prime mover is a turbine rotated by high-pressure steam produced in a boiler by heat from burning fossil fuels.

fossil fuel : Any naturally occurring organic fuel, such as petroleum, coal, and natural gas. Remains of organisms embedded in the surface of the Earth, with high carbon and/or hydrogen content, used as fuels.

Foundry: An operation where metal castings are produced, using coke as a fuel.

Foundry coke: This is a special coke that is used in furnaces to produce cast and ductile iron products. It is a source of heat and also helps maintain the required carbon content of the metal product. Foundry coke production requires lower temperatures and longer times than blast furnace coke.

Foundry Returns: Metal (of unknown composition) in the form of gates, sprues, runners, risers and scraped castings returned to the furnace or re melting.

Four Way: A term used to describe a valve that has four ports, normally a pressure (inlet) port, a return (tank) port, an 'A' ('1') work port and a 'B' ('2') work port.

Four-frequency duplex telegraphy. : Frequency shift telegraphy used in radiotelegraphy in

which each of the four possible combinations of signal elements to two telegraph channels is represented by a separate frequency.

fourier analysis: The expansion of a mathematical function or an experimentally obtained waveform in the form of a trigonometric series.

fourier series: Resolution of a periodic function into its direct component, its fundamental sinusoidal component and an infinite series of harmonic sinusoidal components.

fourier transform: An integral transformation from the time domain to the frequency domain.

Four-way Switch: A switch which is used in conjunction with two three way switches to control one light or other connected equipment from three or more locations

Fox message. : A diagnostic test message that uses all the letters (and that sometimes includes numerals): "the quick brown fox jumps over the lazy dog 1234567890". Often run continuously during system testing and fault isolation.

FPC : Federal Power Commission

FPI: Fault Passage Indicator

FPM: Feet per minute

fps system: The foot pound second system of units is an imperial set of units derived from the fundamental units of the foot, the pound mass and the second.

Fractionation: The process by which saturated hydrocarbons are removed from natural gas and separated into distinct products, or "fractions," such as propane, butane, and ethane.

Fractography : Descriptive treatment of fracture, especially in metal, with specific reference to photography of the fracture surface.

Fracture: Fractures are often described by the appearance of the surface of the break in a piece of steel. Crystalline is bright and glittering, failure having developed along the cleavage planes of individual crystals and can be typical of brittle material. A silky fracture has a smooth dull grain indicative of ductile material such as mild steel. In tensile testing fractures are described by shape, e.g. cup and cone.

Fracture Test: Nicking and breaking a bar by means of sudden impact, to enable macroscopic study of the fractured surface.

Fracture Toughness: A generic term for measure of resistance to extension of a crack. The term is sometimes restricted to results of a fracture mechanics test, which is directly applicable to fracture control.

Fragmentation: The subdivision of a grain into small discrete crystallites outlined by a heavily deformed network of intersecting slip bands as a result of cold working. These small crystals or fragments differ from one another in orientation and tend to rotate to a stable orientation determined by the slip systems.

Frame (1). : Same as transmission block.

Frame (2). : The sequence of bits and bytes in a transmission block.

Frame (3) . : The overhead bits and bytes which surround the information bits in a transmission block.

Frame Relay: It is the cost efficient data transmission telecommunication technology to transfer data between wide area network and local area network.

Frame Size: Motors, like suits of clothes, shoes and hats, come in various sizes to match the requirements of the application. In general, the frame size gets larger with increasing

horsepowers or with decreasing speeds. In order to promote standardization in the motor industry, NEMA prescribes standard frame sizes for certain dimensions of standard motors. For example, a motor with a frame size of 56 will always have a shaft height above the base of 3-1/2 inches.

Framer: Someone who makes the frames or structures for buildings or other equipments.

Framework Convention on Climate Change (FCCC): An agreement opened for signature at the "Earth Summit" in Rio de Janeiro, Brazil, on June 4, 1992, which has the goal of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent significant anthropogenically forced climate change.

Framing. : Process of inserting control bits to identify channels; used in tdm signals such as the formatted version of t1.

Fraying: In cabling, a term used to describe the unraveling of a fibrous braid.

Free alongside ship (f.a.s.): The value of a commodity at the port of exportation, generally including the purchase price plus all charges incurred in placing the commodity alongside the carrier at the port of exportation.

Free Cut: An additional cut with no advancement of depth.

free electron: An electron which is not attached to an atom, molecule or ion, but is free to move under the influence of an electric field.

Free Fit: A class of fit intended for use where accuracy is not essential or where large temperature variations are likely to be encountered or both conditions.

Free Loop Pit: Area below floor level (delivery end No. 5 Pickler; where free running strip ensures synchronization between the tank section and the delivery end. If the delivery end runs too fast, the coil strip is pulled out of the pit and the line shuts down.

Free Machining: Pertains to the machining characteristics of an alloy to which one or more ingredients have been introduced to produce small broken chips, lower power consumption, better surface finish, and longer tool life; among such additions are sulfur or lead to steel, lead to brass, lead and bismuth to aluminum, and sulfur or selenium to stainless steel.

Free on board (f.o.b.): In the international petroleum industry, this term typically refers to the price of oil or natural gas actually charged at the producing country's port of loading. The reported f.o.b. price includes deductions for any rebates and discounts or additions of premiums where applicable and should be the actual price paid to the seller with no adjustment for the cost of ocean freight, insurance, or credit. For coal and breeze, f.o.b. has the dual meaning of the price of coal at the coal mine, or the price of coal at the producer country's port of loading, both before the cost of insurance, freight, and credit.

Free well: A well drilled and equipped by an assignee as consideration for the assignment of a fractional share of the working interest, commonly under a farm-out agreement.

Freecutting Steels: Steels which have had additions made to improve machinability. The most common additives are sulphur and lead, other elements used include tellurium, selenium and bismuth.

free-space path loss. : The loss between 2 isotropic radiators in free space, expressed as a power ratio. Note: free-space path loss is not due to dissipation, but rather because the power pulse density decreases with the square of the separation distance. It is usually expressed in db's and is given by the formula $20 \log (4\pi d/\lambda)$. Where d is the separation of the 2 antennas and λ is the wavelength

freezing point: The temperature of equilibrium between solid and liquid substance at a pressure of one standard atmosphere.

Frequencies, distress. : Frequencies allotted by international agreement to distress calls.

Frequency: The number of cycles over a specified time period over which an event occurs. Normally expressed in cycles per second (hertz, Hz).

Frequency: In ac systems, the rate at which the current changes direction, expressed in hertz (cycles per second); A measure of the number of complete cycles of a waveform per unit of time.

frequency: The number of complete cycles of an alternating voltage or current per unit of time. [Unit hertz or Hz]

Frequency: The number of cycles per second is called frequency. It is measured in hertz (Hz)

Frequency: The number of cycles per second. One cycle per second equals one Hertz (Hz).

Frequency agility (1). : (radio). The ability of a radio set to change frequency according to an algorithm programmed into all component radios on the net.

Frequency agility (2). : The ability of a radar to change frequency within its operating band on a pulse-to-pulse basis.

Frequency allotment plan. : A plan, which shows the frequencies to be used in particular areas or by particular countries without specifying the stations to which the frequencies are to be assigned.

Frequency assignment plan. : A plan which shows the frequencies to be used by specified stations.

Frequency band, assigned. : The frequency band within which the emission of a station is authorised; the width of the band equals the necessary bandwidth plus twice the absolute value of the frequency tolerance. Where space stations are concerned, the assigned frequency band includes twice the maximum doppler shift that may occur in relation to any point on the earth's surface.

Frequency Bands: A division of the audible range of frequencies into sub groups for detailed analysis of sound.

Frequency Changers: A frequency changer is a motor-generator set that changes power of an alternating current system from one frequency to one or more different frequencies, with or without a change in the number of phases, or in voltage.

Frequency Converter: Converts the power of alternating current system from one frequency to one more other frequencies.

Frequency Converters: A Frequency Converter takes an incoming AC frequency and converts it to another AC frequency. They work by first rectifying the incoming AC power to a DC power and then inverting it to the desired AC frequency.

frequency counter: A circuit that can measure and display the frequency of a signal.

Frequency Counters: A Frequency Counter is used to count the number of times an event happens within a certain time frame, such as the number of oscillations in a repetitive signal.

Frequency deviation (of a frequency-modulated wave). : The maximum value of the frequency shift corresponding to the maximum modulation amplitude.

Frequency diversity. : Diversity obtained by the use of two or more radio frequencies conveying the same intelligence.

Frequency division multiplex access (fdma). : A method of several independent users using

the same bandwidth at the same time. The frequency bandwidth is divided into segments or bands. These need not necessarily be of equal value. Each band is an access used for digital and analogue communications and data nets.

Frequency division multiplex. : See multiplex, frequency division.

Frequency evasion. : An electronic counter-countermeasure, which consists of changing frequency to avoid jamming.

Frequency exchange keying (fek). : Telegraphy by amplitude modulation of two tones which are separated by a predetermined value. There is no phase continuity between the tones. These tones can be used to modulate a radio frequency carrier. (see sub-carrier frequency shift).

frequency hopping spread spectrum (fhss). : A modulation technique used for eccm and/or for multiple access. Selection of the particular frequency to be transmitted is normally achieved in a pseudo-random manner from a set of frequencies covering a wide bandwidth. The receiver frequency hops in the same manner as the transmitter in order to retrieve the desired information

Frequency hopping. : A method of changing frequency in a random fashion as an anti-jam measure within a given frequency band. This is achieved by using carefully synchronized equipment in both the receiver and the transmitters. Hopping rates vary in speed, but are referred to as: a.) Slow (tens of hops per second) or b.) Fast (thousands of hops per second).

Frequency Inverters: A Frequency Inverter is used to turn DC power, such as that produced by a battery, into AC power.

Frequency management (operational/tactical) (1). : The function of planning, coordinating, and managing use of individual frequencies through tactical operational, engineering, and administrative procedures.

Frequency management (operational/tactical) (2). : Frequency management and engineering - the function whereby requirements for use of the radio frequency spectrum are presented, reviewed and satisfied, initially and on a continuing basis, and whereby control of the use of the spectrum is exercised. (acomp-01).

frequency modulation : FM A process whereby the frequency of the carrier is controlled by the modulating signal.

Frequency modulation. : See modulation.

frequency nomenclature, electronic warfare frequency band letter designators. : The following broadband letter designators may be used as a matter of convenience to designate frequency bands in the electronic warfare and intelligence environments. However, they are not to be used in official correspondence, publications or instructions pertaining to frequency planning.

Frequency Relay: A device that monitors the frequency of the electricity in a given area of the plant. Should the frequency drop off from 60 Hz, the frequency relay is designed to trip at its designated frequency and open various circuit breakers. Frequency relays in the plant are set up to operate from 59 Hz down to 58 Hz.

frequency response: The frequency response of a circuit is the variation of its behaviour (voltage or current) with change in frequency.

Frequency Response Analysis: A control system analysis, which by introducing a varying rhythmic change (like alternating current) into a process or control unit observes what effect these changes have on the output. Since the information determines how a system or control

unit will react, it is possible to use this method of analysis to predict what the addition of new equipment will mean to an operation.

Frequency scanning (1). : Conducting an electronic search over a frequency band by means of an automatically-tuned receiver, the tuning rate being fixed or variable, and mechanical (low speed) or electronic (high speed).

Frequency scanning (2). : A technique used to enable a radar to transmit on a clear frequency by searching a frequency band then tuning the system to a clear portion of that band.

Frequency series. : A group of several harmonically-related radio frequencies.

Frequency shift keying. (fsk). : An fm technique in which one frequency represents a mark and a second frequency represents a space.

Frequency shift telegraphy. : Telegraphy by frequency modulation in which each significant condition is represented under steady-state conditions by a sinusoidal signal of specified frequency.

frequency spectrum: The frequency spectrum of a signal consists of the plots of the amplitude and phases of the harmonics against frequency.

Frequency stability. : The ability of an oscillator to maintain its operation at a constant frequency.

Frequency Synthesizer: The electronic equipment or system used to generate the range of frequencies from single fixed oscillator.

Frequency tolerance. : The maximum permissible departure by the centre frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency. The frequency tolerance is expressed in parts per 10⁶ or in hertz.

Frequency Transducer: A transducer used for the measurement of the frequency of an A.C. electrical quantity.

Frequency Transducer: The mechanism or system which converts the electrical or electromagnetic energy into sound. It is used in SONAR and other speakers and microphones.

Frequency : The number of cycles per second for a periodic waveform. Measured in hertz (Hz).

Frequency, alternative. : A frequency or a group of frequencies which may be assigned for use on any channel (or on a particular channel), at a certain time or for a certain purpose to replace or supplement the frequencies normally used on that channel.

Frequency, assigned. : The centre of the frequency band assigned to a station.

Frequency, authorised. : A portion of the radio spectrum the width of which is the necessary bandwidth of an emission plus twice the prescribed frequency tolerance.

Frequency, characteristic.: A frequency, which can easily be identified and measured in a given emission. A carrier frequency may, for example, be designated as the characteristic frequency.

frequency, combat scene of action. : A simplex channel for tactical communications in combat operations in which two or more elements of the same or different arms are employed in circumstances precluding the prior agreement of a communication plan.

Frequency, maximum usable high (muf). : The highest frequency that can be used at a particular time for propagation between two specified points by ionospheric reflection.

Frequency, optimum traffic. : The most effective frequency at a specified time for ionospheric propagation of radio waves between two specified points (commonly taken as 85% of the monthly median value of muf for the specified time and path.

Frequency, primary. : A frequency assigned for normal use on a particular circuit.

Frequency, reference. : A frequency having a fixed and specified position with respect to the assigned frequency. The displacement of this frequency with respect to the assigned frequency has the same absolute value and sign that the displacement of the characteristic frequency has with respect to the centre of the frequency band occupied by the emission.

Frequency, scene of air-sea rescue. : A simplex channel for intercommunication between aircraft and surface vessels (including submarines) engaged in and at the scene of an air-sea rescue operation.

frequency, secondary. : A frequency assigned for use on a particular radio circuit when primary frequency becomes unusable for any reason.

Frequency. : The number of recurrences of a periodic phenomenon in a unit of time. In specifying the electrical frequency, the unit of time is the second, for example, the frequency is 15,000 hertz (hz). Radio frequencies are normally expressed in kilohertz (khz) at and below 30,000 kilohertz, and in megahertz (mhz) above this frequency.

Fresh feed input: Represents input of material (crude oil, unfinished oils, natural gas liquids, other hydrocarbons and oxygenates or finished products) to processing units at a refinery that is being processed (input) into a particular unit for the first time.

Fresh feeds: Crude oil or petroleum distillates that are being fed to processing units for the first time.

Fresnel lens: An optical device that focuses light like a magnifying glass; concentric rings are faced at slightly different angles so that light falling on any ring is focused to the same point. Fresnel lenses are flat rather than thick in the center and can be stamped out in a mold.

Friction Clutches: A Friction Clutch is a device for interfacing a prime mover (such as an engine or motor) with a transmission. The basic principle of operation is that a rotating flywheel, attached to the output shaft of the motor, interacts with the friction disc of the clutch, which is attached to input shaft of the transmission. When the clutch is engaged, the friction disc is pressed against the flywheel, and rotation is transferred between the motor and transmission shafts. When the clutch is released, the contact between the friction disc and flywheel is broken, and rotation can not be transferred to the transmission. Friction Clutches are used in automobiles, as well as other applications.

Friction Gouges Or Scratches: A series of relatively short surface scratches variable in form and severity. Refer to Galling.

Friction Welding: Friction Welding describes a number of welding methods that fuse metal or plastic by generating heat with friction, typically by rubbing two pieces together.

Frictional Wear: The displacement and/or detachment of metallic particles from a surface as a consequence of being in contact with another moving component.

FRMR: Flame-retarding, moisture-resisting finish.

Front End: The inside lap of the produced coil, or the outside lap of the consumed coil.

Front End Loaders: A Front End Loader is a tractor that is equipped with a bucket that can be used to scoop and lift earth, rubble, or other bulk solids.

Froude Number: Used in hydraulics as an analog to the Reynolds number. It is the ratio of

inertial forces to gravitational forces.

FRP: Fiberglass Reinforced Plastic.

FRP: Fiberglass reinforced plastics

FRS: Financial Reporting System Survey (EIA survey).

Fuel: Any material substance that can be consumed to supply heat or power. Included are petroleum, coal, and natural gas (the fossil fuels), and other consumable materials, such as uranium, biomass, and hydrogen.

fuel: Any substance which is used for producing heat energy, either by means of the release of its chemical energy by combustion or its nuclear energy by nuclear fission.

Fuel: Any material that can be burned to make energy.

fuel adjustment charge: A clause in the rate schedule that provides for adjustment of the amount of a bill as the cost of fuel varies from a specified base amount per unit. The specified base amount is determined when rates are approved. This item is shown on all consumer bills and indicates the current rate for any adjustment in the cost of fuel used by the utility. It can be a credit or a debit. The fuel adjustment lags usually lags one or two months behind the actual price of the fuel.

Fuel Air: A controller for fuel air dampers on boilers. To maintain proper combustion on oil fire.

Fuel assembly: Structured collection of fuel rods or elements, the unit of fuel in a reactor.

Fuel cell: A device capable of generating an electrical current by converting the chemical energy of a fuel (e.g., hydrogen) directly into electrical energy. Fuel cells differ from conventional electrical cells in that the active materials such as fuel and oxygen are not contained within the cell but are supplied from outside. It does not contain an intermediate heat cycle, as do most other electrical generation techniques.

Fuel cell: A device that converts the energy of a fuel directly to electricity and heat, without combustion. Because there is no combustion, fuel cells give off few emissions; because there are no moving parts, fuel cells are quiet.

fuel cell : A electrochemical energy conversion device for producing electricity converting hydrogen and oxygen into electricity. These cells convert chemical energy directly into electrical energy.

Fuel cycle: The entire set of sequential processes or stages involved in the utilization of fuel, including extraction, transformation, transportation, and combustion. Emissions generally occur at each stage of the fuel cycle.

fuel diversity : A utility or power supplier that has power stations using several different types of fuel.

Fuel efficiency: See Miles per gallon.

fuel element: An element of nuclear fuel for use in a nuclear reactor, usually uranium encased in a case.

Fuel emergencies: An emergency that exists when supplies of fuels or hydroelectric storage for generation are at a level or estimated to be at a level that would threaten the reliability or adequacy of bulk electric power supply. The following factors should be taken into account to determine that a fuel emergency exists 1. Fuel stock or hydroelectric project water storage levels are 50 percent or less of normal for that particular time of the year and a continued downward trend in fuel stock or hydroelectric project water storage level is estimated; or 2.

Unscheduled dispatch or emergency generation is causing an abnormal use of a particular fuel type, such that the future supply of stocks of that fuel could reach a level that threatens the reliability or adequacy of bulk electric power supply.

fuel escalation : The annual rate of increase of the cost of fuel, including inflation and real escalation, resulting from resource depletion, increased demand, etc.

Fuel ethanol: Ethanol intended for fuel use. Fuel ethanol in the United States must be anhydrous (less than 1 percent water). Fuel ethanol is denatured (made unfit for human consumption), usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent petroleum, typically pentanes plus or conventional motor gasoline. Fuel ethanol is used principally for blending in low concentrations with motor gasoline as an oxygenate or octane enhancer. In high concentrations, it is used to fuel alternative-fuel vehicles specially designed for its use. See Alternative-Fuel

Vehicle, Denaturant, E85, Ethanol, Fuel Ethanol Minus Denaturant, and Oxygenates.

Fuel Ethanol Minus Denaturant: An unobserved quantity of anhydrous, biomass-derived, undenatured ethanol for fuel use. The quantity is obtained by subtracting the estimated denaturant volume from fuel ethanol volume. Fuel ethanol minus denaturant is counted as renewable energy, while denaturant is counted as nonrenewable fuel.

See Denaturant, Ethanol, Fuel Ethanol, Nonrenewable Fuels, and Oxygenates .

Fuel expenses: These costs include the fuel used in the production of steam or driving another prime mover for the generation of electricity. Other associated expenses include unloading the shipped fuel and all handling of the fuel up to the point where it enters the first bunker, hopper, bucket, tank, or holder in the boiler-house structure.

fuel expenses : Costs associated with the generation of electricity.

Fuel fabrication: Making reactor fuel assemblies, usually from sintered UO₂ pellets which are inserted into zircalloy tubes, comprising the fuel rods or elements.

Fuel Flow: The measured flow of the various fuels supplied to the boilers.

Fuel injection: A fuel delivery system whereby gasoline is pumped to one or more fuel injectors under high pressure. The fuel injectors are valves that, at the appropriate times, open to allow fuel to be sprayed or atomized into a throttle bore or into the intake manifold ports. The fuel injectors are usually solenoid operated valves under the control of the vehicle's on-board computer (thus the term "electronic fuel injection"). The fuel efficiency of fuel injection systems is less temperature-dependent than carburetor systems. Diesel engines always use injectors.

Fuel oil: A liquid petroleum product less volatile than gasoline, used as an energy source. Fuel oil includes distillate fuel oil (No. 1, No. 2, and No. 4), and residual fuel oil (No. 5 and No.6).

Fuel oil supplier: See Energy supplier.

Fuel purchase agreement: An agreement between a company and a fuel provider which stipulates that the company agrees to purchase its fuel from the fuel provider. If the company has a credit card for use at a fuel provider's locations, but is not bound by an additional agreement to purchase fuel from that provider, the credit card agreement alone is not considered a fuel purchase agreement.

Fuel ratio: The ratio of fixed carbon to volatile matter in coal.

Fuel switching capability: The short-term capability of a manufacturing establishment to

have used substitute energy sources in place of those actually consumed. Capability to use substitute energy sources means that the establishment's combustors (for example, boilers, furnaces, ovens, and blast furnaces) had the machinery or equipment either in place or available for installation so that substitutions could actually have been introduced within 30 days without extensive modifications. Fuel-switching capability does not depend on the relative prices of energy sources; it depends only on the characteristics of the equipment and certain legal constraints.

Fuel wood: Wood and wood products, possibly including scrubs and branches, etc, bought or gathered, and used by direct combustion.

Fuel/fabricator assembly identifier: Individual assembly identifier based on a numbering scheme developed by individual fuel fabricators. Most fuel fabricator assembly identifiers schemes closely match the scheme developed by the American National Standards Institute (ANSI) and are therefore unique.

Fuels solvent deasphalting: A refining process for removing asphalt compounds from petroleum fractions, such as reduced crude oil. The recovered stream from this process is used to produce fuel products.

Fuel-switching DSM program assistance: DSM program assistance where the sponsor encourages consumers to change from one fuel to another for a particular end-use service. For example, utilities might encourage consumers to replace electric water heaters with gas units or encourage industrial consumers to use electric microwave heaters instead of natural gas-heaters.

Fugitive emissions: Unintended leaks of gas from the processing, transmission, and/or transportation of fossil fuels.

Fulcrum: The point or support on which a lever turns.

Fulgurate: A glasslike structure that forms around the element of a current limiting fuse when it operates. It is caused when the heat of the arc melts the silica sand surrounding it.

Fulgurate: to destroy and remove tissue using a high-frequency electric current applied with a needlelike electrode.

Full Annealing: Annealing a ferrous alloy by austenitizing and then cooling slowly through the transformation range. The austenitizing temperature to hypoeutectoid steel is usually above A_{c3} ; and for hypereutectoid steel, usually between A_{c1} and A_{c} (cm).

Full crl. : A complete revocation list that contains entries for all certificates that have been revoked for the given scope.

Full Duplex: it is the data exchanging process for two side communications. In this system both parties can talk at a time.

Full Duplex Communications: A communications system in which data can travel simultaneously in both directions.

Full Duplex Communications: It is the communication system in which both the parties can speak at a time rather than wait to complete the once statement.

Full Finish Plate: Steel sheet or strip, reduced either hot or cold, cleaned, annealed, and then cold rolled to a bright finish.

Full Flow: A filter in which oil the fluid must pass through the filter element or medium.

Full forced outage: The net capability of main generating units that are unavailable for load for emergency reasons.

Full Hard: Cold rolled coils coming from the Strip Steel that have not been annealed.

Full Hard Cold Rolled: Hot rolled pickled steel that is cold reduced to a specified thickness and subject to no further processing (not annealed or temper rolled). The product is very stiff; it is intended for flat work where deformation is very minimal.

Full Hard Temper: (A) (No. 1 Temper) In low carbon sheet or strip steel, stiff and springy, not suitable for bending in any direction. It is the hardest temper obtainable by hard cold rolling. (B) In Stainless Steel Strip, tempers are based on minimum tensile or yield strength. For Chromium Nickel grades Full Hard temper is 185,000 TS, 140,000 YS Min. Term also used in connection with copper base alloys and considered synonymous with Hard Temper.

Full Load Amps: The amount of current the motor can be expected to draw under full load conditions. Also known as Nameplate Amps

full load current: The largest current that a motor or other device is designed to carry under specific conditions. Also current at rated conditions.

Full Load Speed: An indication of the approximate speed that the motor will run when it is putting out full rated output torque or horsepower.

Full Load Torque: Full load torque is the rated continuous torque that the motor can support without overheating within its time rating.

Full power day: The equivalent of 24 hours of full power operation by a reactor. The number of full power days in a specific cycle is the product of the reactor's capacity factor and the length of the cycle.

Full power operation: Operation of a unit at 100 percent of its design capacity. Full-power operation precedes commercial operation.

Full requirements consumer: A wholesale consumer without other generating resources whose electric energy seller is the sole source of long-term firm power for the consumer's service area. The terms and conditions of sale are equivalent to the seller's obligations to its own retail service, if any.

Full Scale: The specified maximum magnitude of the input quantity being measured that can be applied to a transducer without causing a change in performance beyond specified tolerance

Full Scale: Having the actual dimensions or of same size.

Full Scale Output: The specified maximum output value for which the stated accuracy condition applies

Full Scale Output: Full scale output (FSO) is the algebraic difference between the electrical output signals measured with maximum input stimulus and the lowest input stimulus applied.

full wave rectifier: A rectifier with a centre tapped secondary windings and two diodes, or a bridge rectifier circuit.

Full-duplex transmission.: Simultaneous 2-way independent transmission in both directions. Compare with half-duplex transmission. Also used to describe terminals in the echoplex mode.

Fullerphone. : An instrument which employs a very low direct current in the line, but converts this direct current into an intermittent current of audible frequency at the receiver and thus enables hand-speed morse telegraphy over good or bad lines with the least chance of remote reception.

Fumarole: A vent from which gas or steam issue; a geyser or spring that emits gases.

Fume Exhaust Hoods: It control the flow of fumes or guide the fumes to the chimnies.it is mainly used is hotels kitchens to throw the fumes out threw chimneys

Fume Scrubbers: The fume scrubber is a device used in fume exaught hood .it removes the dangerous gases or chemical vapor from air or smoke.

Fumes: Fumes are a type of AIR, GAS or Smoke. The fume having rich quantity of vapor compare to normal air. When the air having more chemical vapor which is dangerous for health.

Function: A set of software instructions executed by a single line of code that may have input and/or output parameters and return a value when executed.

function (BTDF) : function (BTDF) the optical scattering func-tion for transmissive optics. The scattering function vs. angle is normalized to signal at zero degrees and with respect to solid angle of detector, including obliquity factor.

function generator: A circuit that produces a variety of waveforms.

Function Generators: It is a electronics item which create the electrical waveforms. Which is used for develop, repair and testing of electrical items.

function key.: A term associated with specific keys on a teletypewriter (e.g. Cr, lf, figs, ltrs etc.), which when operated, cause the teletypewriter to perform mechanical functions in order that a message may be received in proper form. A term also associated with specific keys on a computer keyboard which, when pressed, cause the computer to perform predefined operations.

Functional Block Diagram: One of the IEC 611313 programming languages.

Functional Block Diagram: The block diagram to represent the inputs and outputs of any system. It can be used to understand anything.

functional earth conductor: Conductor to be connected to a functional earth terminal.

functional earth terminal: Terminal directly connected to a point of a measuring supply or control circuit or to a screening part which is intended to be earthed for functional purposes.

functional earthing: Connection to Earth necessary for proper functioning of electrical equipment.

functional extra low voltage (FELV) : An extra low voltage system in which not all of the protective measures required for SELV or PELV have been applied.

functional switching : An operation intended to switch 'on' or 'off' or vary the supply of electrical energy to all or part of an installation for normal operating purposes.

fundamental displacement factor FDF: Cosine of the phase difference between the fundamental components of voltage and current. For non distorted sinusoids, it is also equal to the power factor.

fundamental units: The units in which physical quantities are measured which are independent from each other.

Furnace: Furnace is high temperature having heated chamber which is used for melting the metals to its critical temperature.(The furnace word is coming from Greek work fornex. Which mean OVEN.

Furnace: The part of a boiler or warm-air space-heating plant in which combustion takes place.

Furnace coke plant: A coke plant whose coke production is used primarily by the producing company.

Furnace Pressure: The pressure of

Furnaces that heat directly, without using steam or hot water (similar to a residential furnace): Furnaces burn natural gas, fuel oil, propane/ butane (bottled gas), or electricity to warm the air. The warmed air is then distributed throughout the building through ducts. Many people use the words "boilers" and "furnaces" interchangeably. They are not the same. We mean that warm air is produced directly by burning some fuel. Warm-air furnaces typically rely on air ducts to carry the warm air throughout the building. Warm-air furnaces are often built in combination with central air-conditioning systems, so that they can use the same air ducts for either heating or air-conditioning (depending on the season). Other terms for describing this type of equipment include "central system," "split system," and "forced air/forces air furnace."

Fuse: A protective device designed to interrupt current flow (open) through a circuit when current exceeds a rated value.

Fuse: A device installed in the conductive path with a predetermined melting point coordinated to load current. Fuses are used to protect equipment from over current conditions and damage.

fuse: An over-current protective device for opening a circuit by means of a conductor designed to melt and break when an excessive current flows along it for a sufficient time. The fuse comprises all the parts that form the complete device.

Fuse: It is a type of low resistance resistor. it is used to interrupt or break the electrical connections in case of any short circuit, over current or fault.

Fuse: An overcurrent protective device containing a calibrated current-carrying member which melts and opens under specified overcurrent conditions.

Fuse Arcing Time: The amount of time required to extinguish the arc and clear the circuit.

Fuse Block or Fuse Holder: A device, designed and intended to hold a fuse and provide the means to connect it to the electrical circuit. Fuse blocks consist of fuse clips, insulator and terminals.

fuse carrier: The movable part of a fuse designed to carry a fuse link.

Fuse Clip: A conductive mechanical device for accepting and securing the conductive part of a fuse to an electrical terminal or connection point.

fuse element: A part of a fuse, which is designed to melt and thus open a circuit

Fuse Link: A replaceable fuse element used in a Fused Cutout.

fuse link: A part of a fuse, which comprises a fuse element and a cartridge (or other container) and is capable of being attached to the fuse contacts

Fuse Melt Time: The time needed for a fuse element to melt, thereby initiating operation of the fuse. Also known as Melt Time.

Fuse Switches: The fuse switches are mainly used as a circuit breaker. The overload current is cause burning of electronics goods. So the FUSE SWITCHES is brake the circuit when overload current is coming.

Fused Circuit Breaker: An integrally fused circuit breaker which combines the design and operating features of a circuit breaker and current-limiting fuse in one package.

Fused Cutout: A device, normally installed overhead, that is used to fuse a line or electrical apparatus.

Fused Cutout: it is the cutout system used in overhead feeder lines to protect from any

current surges and overloads.

Fusible link: The metallic strips soldered together which can melt at the specified temperature and break the connection in case of overload and short circuit.

Fusible Plug: The Fusible plug is made of Bronze, brass. It has the threads and a hole through the whole length. And the end of the hole length a low melting point seal is placed which is broken when the pressure is become so high. The pressure cooker is the simplest form where the "Fusible Plug" is used.

fusing current: This is the minimum current that will cause the fuse element to heat up melt or blow

fusing factor: This is the ratio of the fusing current to current rating

Fusion Welding: Terms are related to welding process. It is basically melting of two-similar material for joining purpose.

Futures Contract: It is a finance terms. Which is mainly used for future contract between two parties for sale and purchase of the goods or asset.

Futures market: A trade center for quoting prices on contracts for the delivery of a specified quantity of a commodity at a specified time and place in the future.

FX: Single rubber-insulated Christmas tree wire with outer braid. 125V, 60°C

FXT: Single plastic-insulated Christmas tree wire. 125V, 60°C

G: Rubber-insulated, neoprene, Hypalon or CPE jacketed, portable power cable with two to five #8 A.W.G. or larger conductors with ground wires.

G :

G Coatings: Galvanize Coatings

Ga: Chemical symbol for Gallium

GAAP: See Generally Accepted Accounting Principles.

GaAs: Gallium arsenide. It is the compound of Gallium and arsenide and used to manufacture the electronic equipments.

GaAsFET: Gallium arsenide field-effect transistor. It is a field-effect transistor (FET) that is used in amplifier circuits at very-high, ultra-high, and microwave radio frequencies.

GaAsP: Gallium arsenide phosphide. It is a semiconductor material of combination of Gallium arsenide and gallium phosphide and used to manufacture the red, orange and yellow light-emitting diodes.

Gabion Baskets: A Gabion Basket is a large container used to build retaining walls and other structures in civil engineering applications.

Gage: Any one of a large variety of devices for measuring or checking the dimensions of objects.

Gage: A term used to denote the physical size of a wire.

Gage Length: The original length of that portion of the specimen over which strain or change of length is determined.

Gage Marks: Reference marks; in tensile testing, the marks which indicate the gage length, used in determination of tensile elongation.

Gaggers: Metal pieces of irregular shape used to reinforce and support the sand in the mold.

Gagging: Checking dimensional requirement by means of a gage.

gain: A measure of amplification of a device, usually expressed in dB.

Gain: the measure of the ability of two port circuit to increase the power of a signals from

input to output port.

Gain Accuracy: Measure of deviation of the gain of an amplifier from the ideal gain.

gal : gallon

Galfan: A galvanized product coated with 95% free zinc, 5% aluminum and traces of mish metal in the coating; provides extra corrosion protection with lighter coating weight; has improved formability over regular free zinc coatings (hot dipped galvanized regular products).

Galling: The damaging of one or both metallic surfaces by removal of particles from localized areas due to seizure during sliding friction.

Gallium (Ga): A chemical element, atomic number 31, metallic in nature, used in making certain kinds of solar cells and semiconductor devices.

Gallium arsenide (GaAs): A crystalline high-efficiency semiconductor/photovoltaic material.

Gallon: A volumetric measure equal to 4 quarts (231 cubic inches) used to measure fuel oil. One barrel equals 42 gallons.

gallon : (gal) Imperial gallon. A measure of volume. 1 gal = 4.54596 litre

gallon : (US) A measure of volume. 1 US gallon = 3.785 litre

Galvalume(R): Steel sheet with a unique coating of 55% aluminum and 45% zinc that resists corrosion. The coating is applied in a continuous hot dipped process, which improves the steel's weather resistance. Galvalume A8 is a trademark of BHP Steel, and the product is popular in the metal building market.

Galvaneal Coating (A): Coatings on hot dipped galvanized steels processed to convert the coating completely to zinc iron alloys; dull gray in appearance, have no spangle, and after proper preparation, are well suited for painting.

Galvanic Action: When iron and steel are subject to conditions of aqueous corrosion the incidence and rate at which the corrosion takes place will alter if the steel is coupled with other metals or alloys that are also exposed to the electrolyte. Copper, brass, bronze, lead and nickel are more ?noble? and act as auxiliary cathodes to the steel and accelerate its anodic dissolution, that is, its corrosion. Magnesium, zinc and zinc base alloy are nearly always less noble and tend to divert the attack from the steel to themselves. The galvanic relationship of various metals is an important factor affecting corrosion.

Galvanic Corrosion: Corrosion associated with the current of a galvanic cell consisting of two dissimilar conductors in an electrolyte or two similar conductors in dissimilar electrolytes. Where the two dissimilar metals are in contact, the resulting action is referred to as couple action.

Galvanic Isolation: Electrical system design techniques to eliminate direct conduction path and energy can be transferred by other means like capacitance and electromagnetic waves.

Galvanic Isolators: A Galvanic Isolator is any system used to separate electrical current between two circuits while still allowing for energy or signal transmission. Examples include, transformers, opto-couplers, and magnetocouplers.

galvanised iron: Iron coated with a layer of zinc to prevent corrosion, usually by hot dipping into the molten metal.

Galvanize: A sheet product substrate to which free zinc is applied either by hot dipping or electro plating.

Galvanize Coatings (G): Free zinc coatings applied to a hot rolled or cold rolled steel to produce Galvanized steel. The coating can be applied by the hot dip or electrodeposition process.

Galvanized Pipes: A Galvanic Pipe refers to pipe to steel pipe that has been coated with zinc for the purpose of corrosion protection.

Galvanized Steel: Steel coated with a thin layer of zinc to provide corrosion resistance in underbody auto parts, garbage cans, storage tanks, or fencing wire. Sheet steel normally must be cold rolled prior to the galvanizing stage. HOT DIPPED. Steel is run through a molten zinc coating bath, followed by an air stream wipe that controls the thickness of the zinc finish. ELECTROGALVANIZED. Zinc plating process whereby the molecules on the positively charged zinc anode attach to the negatively charged sheet steel. The thickness of the zinc coating is readily controlled. By increasing the electric charge or slowing the speed of the steel through the plating area, the coating will thicken. DIFFERENCES. Electro galvanizing equipment is more expensive to build and to operate than hot dipped, but it gives the steelmaker more precise control over the weight of the zinc coating. The automotive manufacturers, because they need the superior welding, forming and painting ability of electrogalvanized steel, purchase 90% of all tonnage produced.

Galvanizing: Coating steel with a thin layer of zinc to increase its corrosion resistance. Most galvanizing is done on a hot dip operation, but electro galvanizing is becoming more important today. Electro galvanizing is a cold coating electroplating process that, unlike the hot dip process, does not influence the mechanical properties of the sheet steel. Electro galvanizing provides a more uniform coating.

Galvanizing: A coating of some metal part (usually steel or iron) with zinc by dipping or electroplating.

Galvanizing Pot: Holds the molten free zinc coatings applied to a hot rolled or cold rolled steel to produce Hot dip Galvanized steel.

Galvanizing Services: A Galvanizing Service is a company that will galvanize steel components for corrosion protection purposes.

Galvannealed: An extra tight coat of galvanizing metal (zinc) applied to a soft steel sheet, after which the sheet is passed through an oven at about 1200 degrees F. The resulting coat is dull gray without spangle especially suited for subsequent painting.

galvanometer: An instrument for detecting, comparing, or measuring small electric currents, but not usually calibrated. Usually depends on the magnetic effect produced by an electric current.

Gamma Correction: Gamma correction controls the overall brightness of an image. Or nonlinear operation used to code and decodes luminance or tristimulus values in video or still image systems Images which are not properly corrected can look either bleached out, or too dark.

Gamma Iron: A face centered cubic form of pure iron, stable from 1670 to 2551 B0F (910 to 1400 B0C).

Gamma rays: High energy electro-magnetic radiation from the atomic nucleus, virtually identical to X-rays.

Gang: The space required for one wiring device, wall plate etc.

Gang Milling: A milling set up where a number of cutters are arranged on an arbor so that

several surfaces can be machine at one time. It is commonly used for production purposes.

Gangue Depressants: A Gangue Depressant is a chemical treatment used to separate gangue in a flotation cell. Gangue is the worthless material that must be separated from valuable ore.

Gannister: An acid (silicious) refractory often used in furnace linings.

Gantry Crane: A gantry is type of overhead crane in which the hoist mechanism is mounted onto trolley mechanism and allowed to move along a set of rails or beams. The gantry may be a fixed structure, or it may be support on wheels allowing the entire gantry structure to be mobile.

Gap: The distance between the slitter knives (ex .001, .002).

Garbage. : An information term used to refer to corrupted data.

Garble table.: Any table, chart or other aid, which may be used to correct a garble.

Garble. :

Gas: A non-solid, non-liquid combustible energy source that includes natural gas, coke-oven gas, blast-furnace gas, and refinery gas.

gas: A substance whose physical state (gaseous state) is such that it always occupies the whole of the space in which it is contained.

Gas Analysers/Analyzers: A Gas Analyser is a device used to determine the chemical composition of a gas. Most commercial gas analyzers are based on an infrared spectrum analyzing technique but may also be combined with mass spectrometry.

Gas Burners : A Blast Furnace Gas Burner is a specially designed burner for converting blast furnace gas to heat. Blast furnace gas is a by product of iron production and can be used to generate heat or power from secondary plant operations.

Gas Carburising: A heat treatment method used in the case hardening of steel. Carbon is absorbed into the outer layers of the components by heating in a current of gas, rich in carbon compounds. The process is more versatile than some other methods as the depth of the case and the limiting carbon content of the case can be controlled by the composition of the atmosphere, the dew point and the temperature.

Gas Condensate Well Gas: Natural gas remaining after the removal of the lease condensate.

Gas cooled fast breeder reactor (GCFB): A fast breeder reactor that is cooled by a gas (usually helium) under pressure.

Gas Engine Pumps: A pump is a mechanical device used to drive a fluid or gas from one place to another. In a gas engine pump, the gas engine is used to provide the energy and torque to turn a blade-driven pump. The size of the gas engine and pump is based on the application and the required delivery pressure or speed.

Gas Filled Surge Suppressors: A Gas Filled Surge Suppressor is used to protect electrical systems from overvoltages, and are commonly used in the telecommunications industry.

Gas Fired Boilers: A Gas Fired Boiler provides heat via gas combustion. They are common in both industrial and residential environments.

Gas Leak Detection: Gas Leak Detection is the application of any number of sensor technologies to detect hazardous gas leaks. Sensor technologies include Infrared, electrochemical, and ultrasonic methods.

Gas plant operator: Any firm, including a natural gas processing plant owner, that operates a gas plant and keeps the gas plant records.

Gas Porosity: A condition existing in a casting by the trapping of gas in the molten metal or

by mold gases evolved during the pouring of the casting.

Gas processing unit: A facility designed to recover natural gas liquids from a stream of natural gas that may or may not have passed through lease separators and/or field separation facilities. Another function of natural gas processing plants is to control the quality of the processed natural gas stream. Cycling plants are considered natural gas processing plants.

Gas Stream Temp: The temperature of the gas stream used in heating the coils. Typical temperatures range from 1180 degrees to 1330 degrees. The system will accept a number < 1500 degrees F.

Gas to liquids (GTL): A process that combines the carbon and hydrogen elements in natural gas molecules to make synthetic liquid petroleum products, such as diesel fuel.

Gas Turbine: A Gas Turbine produces mechanical energy from the flow of combustible gas. They are used both in power generation, aviation, and heavy equipment industries.

gas turbine: Consists typically of an axial-flow air compressor, one or more combustion chambers (where liquid or gaseous fuel is burned). The hot gases are passed to the turbine and expanded to drive the generator and run the compressor.

Gas Turbine Exhaust Systems: A Gas Turbine Exhaust System is used to capture waste heat from gas turbine to either power a secondary steam turbine, or for plant or factory heating.

Gas turbine plant: A plant in which the prime mover is a gas turbine. A gas turbine consists typically of an axial-flow air compressor and one or more combustion chambers where liquid or gaseous fuel is burned and the hot gases are passed to the turbine and where the hot gases expand drive the generator and are then used to run the compressor.

gas turbine plant: A plant in which the prime mover is a gas turbine.

Gas Vent Dampers: A Gas Vent Damper is used to shut the flue when a furnace is not actively operating to prevent excessive heat loss.

Gas well: A well completed for production of natural gas from one or more gas zones or reservoirs. Such wells contain no completions for the production of crude oil.

Gas well productivity: Derived annually by dividing gross natural gas withdrawals from gas wells by the number of producing gas wells on December 31 and then dividing the quotient by the number of days in the year.

Gasification: A method for converting coal, petroleum, biomass, wastes, or other carbon-containing materials into a gas that can be burned to generate power or processed into chemicals and fuels.

Gasohol: A blend of finished motor gasoline containing alcohol (generally ethanol but sometimes methanol) at a concentration between 5.7 percent and 10 percent by volume. Also see Oxygenates.

Gasoil: European and Asian designation for No. 2 heating oil and No. 2 diesel fuel.

Gasoline: See Motor gasoline (finished).

Gasoline blending components: Naphthas which will be used for blending or compounding into finished aviation or motor gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus.

Gasoline grades: The classification of gasoline by octane ratings. Each type of gasoline (conventional, oxygenated, and reformulated) is classified by three grades - Regular, Midgrade, and Premium. Note Gasoline sales are reported by grade in accordance with their

classification at the time of sale. In general, automotive octane requirements are lower at high altitudes. Therefore, in some areas of the United States, such as the Rocky Mountain States, the octane ratings for the gasoline grades may be 2 or more octane points lower.

Gasoline motor, (leaded): Contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. The actual lead content of any given gallon may vary. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Gasoline treated as blendstock (GTAB): Non-certified Foreign Refinery gasoline classified by an importer as blendstock to be either blended or reclassified with respect to reformulated or conventional gasoline. GTAB is classified as either reformulated or conventional quality based on emissions performance, formulation, and intended end use.

Gas-Proof: Apparatus is designed as gas-proof when so constructed or protected that the specified gas will not interfere with successful operation.

Gassing (Battery): The evolution of gas from one or more of the electrodes in a cell. Gassing commonly results from local action (self discharge) or from the electrolysis of water in the electrolyte during charging.

Gassing current: Portion of charge current that goes into electrolytic production of hydrogen and oxygen from the electrolytic liquid. This current increases with increasing voltage and temperature.

Gas-Tight: Apparatus is designed as gas-tight when so constructed that the specified gas will not enter the enclosing case under specified test conditions.

Gate: A logic circuit performing a specific logic function. See AND, OR, NAND, OR and NOT.

gate: The terminal of a FET that controls drain current. Also the terminal of a thyristor used to turn on the device.

Gate station: Location where the pressure of natural gas being transferred from the transmission system to the distribution system is lowered for transport through small diameter, low pressure pipelines.

Gate Valve: A Gate Valve is used as an inline shut-off valve. It opens and closes by moving a wedge in and out of the flow path.

Gateway: The Gateway is a computer which provides interfaces between the local computer system and one or several SCADA (or RCC) systems.

Gateway: The network point which allow to enter other network

Gateway (1). : The interconnection between 2 networks with different communications protocols: two examples are pads and protocol converters. Gateways operate at the 4th through 7th layers of the osi model. Contrast with bridge.

Gateway (2). : An interface between two different service provision systems or sub-systems, such as a gateway conforming to acp 145 standards. Gateways often adapt a message format to make it consistent with the receiving system. In the case of hgm, a gateway between these systems is expected to preserve the 'high grade' capability.

Gatherer: A company primarily engaged in the gathering of natural gas from well or field lines for delivery, for a fee, to a natural gas processing plant or central point. Gathering companies may also provide compression, dehydration, and/or treating services.

Gating System: The complete assembly of sprues, runners and gates in a mold through which steel flows before entering the casting cavity.

Gauge Chart: A paper strip used to record the gauge of the strip as it runs on the side trimmers.

Gauge Code: Industry standard code that indicates quality tolerance of the thickness of the steel.

Gauge Length: Used in the mechanical testing of steel. Better quality steel has a consistent gauge to prevent weak spots or deformation.

Gauge Plate: An alloy tool steel supplied in flat and square section with the surfaces ground to close limits. It is also known as Ground Flat Stock and is used for the manufacturing of gauges, punches, dies, jigs, templates, ect..

Gauge Pressure: A term used to state that any pressure stated is corrected for atmospheric pressure. Normally abbreviated psig (pounds per square inch gauge).

Gauge Pressure (PSIG): A measure of pressure reference to atmospheric pressure.

Gauge Tolerance: A range by which a product's gauge can deviate from those ordered and still meet the order's requirements.

Gauss: A unit of measurement for magnetic field.

gauss G: An old unit for measuring magnetic flux density (or magnetic induction). $1 \text{ G} = 10^{-4} \text{ T}$

GDP : Gross Domestic Product

Ge: Chemical symbol for Germanium

Gear Couplings: A Gear Coupling is used to transmit torque between two misaligned shafts. Each shaft ends terminates in flexible joint with a gear/spline pair and are connected to each other with a third shaft, called the spindle.

Gear Cutting: Gear Cutting is the process of shaping a gear, either by milling, hobbing, broaching or grinding.

Gear Shapers: A Gear Shaper is a machine used to cut gears. It uses a gear shaped cutting tool with identical pitch to the gear being cut.

Geared Ac Electrical Motors: Geared AC Electrical Motors combine an AC motor with a gear box in an integrated package.

Geared Motors: Geared Motors integrate prime movers with a gearbox.

Gearheads: A Gearhead is a geared mechanical transmission. It typically is used in reference to a transmission that is integrated to the output shaft of a motor, such as a DC electric motor.

Gearless Mills: A Gearless Mill is a type of ball mill for ore processing that has no traditional geared transmission components. Instead, the Mill itself can be thought of as the rotor of a large scale electric motor, and the stator is incorporated in the structure surrounding the mill.

gee.: A vhf system of radio navigation by which interrelated pulses transmitted from ground stations are received in a craft. The position of the craft can be determined by observing the interval between pulses from pairs of stations and plotting them on a map or navigational chart over-printed with the gee-lattice.

Gel Cleaner: A chemical based cleaner used to remove the gel in a fiber optic cable. Gel cleaner is made by American Polywater Corp.

Gel Spotting: A coating defect consisting of the uniform circular spots or droplets of higher

film thickness on the coated sheet. Gel spotting, while appearing similar to slinging, is much more uniform in appearance and caused by a different mechanism. Gel spotting occurs when a partially gelled coating is applied to the substrate.

Gel : A chemical compound used to seal and mechanically cushion fiber optic filament in a cable. The cleaners used to remove are made by American Polywater.

Gel-type battery: Lead-acid battery in which the electrolyte is composed of a silica gel matrix.

Gem Switch: An electronic module clamped to a tank sight glass used to transmit information to the computer regarding tank level.

General Purpose Fuse: A fuse which meets industry standards for overload and short circuit protection as well as physical dimensions. This fuse type is tested and certified by nationally recognized testing laboratories and may be applied in accordance with the National Electrical Code and the Canadian Electrical Code to provide main, feeder and branch circuit protection.

General Purpose Interface Bus (GPIB): Synonymous with HP-IB(for Hewlett-Packard),the standard bus used for controlling electronic instruments with a computr.Also called IEEE 488 in reference to defining ANSI/IEEE standards.

Generally accepted accounting principles (GAAP): Defined by the FASB as the conventions, rules, and procedures necessary to define accepted accounting practice at a particular time, includes both broad guidelines and relatively detailed practices and procedures.

Generating facility: An existing or planned location or site at which electricity is or will be produced.

Generating Sets: A Generator Set refers to the combination of a fuel powered prime mover and an alternator to produce AC power at a usable frequency, generally 50 or 60 Hz.

Generating station: A station that consists of electric generators and auxiliary equipment for converting mechanical, chemical, or nuclear energy into electric energy.

generating station, generating plant : The location of prime movers, electric generators, and auxiliary equipment used for converting mechanical, chemical, and nuclear energy into electric energy.

Generating Tube: Boiler tubes that extend from the three upper drums to the mud drum. Generating tubes are used to generate the majority of steam produced by the boiler.

Generating unit: Any combination of physically connected generators, reactors, boilers, combustion turbines, and other prime movers operated together to produce electric power.

generating unit: Any combination of physically connected generators, reactors, boilers, combustion turbines, or other prime movers operated together to produce electric power.

Generation: The process of producing electric energy by transforming other forms of energy; also, the amount of electric energy produced, expressed in kilowatthours.

generation: The process of producing electrical energy by transforming non electrical forms of energy.

Generation company: An entity that owns or operates generating plants. The generation company may own the generation plants or interact with the short-term market on behalf of plant owners.

generation company genco : A regulated or non-regulated entity (depending upon the industry structure) that operates and maintains existing generating plants. The Genco may

own the generation plants or interact with the short term market on behalf of plant owners.

generation dispatch and control : Aggregation and dispatching (sending off to some location) generation from various generating facilities, providing backup and reliability of services.

Generator: A device that converts mechanical energy to electrical energy.

generator: A machine for converting mechanical energy into electrical energy.

Generator: A machine used to change mechanical energy into electrical energy.

Generator: A machine which converts mechanical power into electrical power.

Generator capacity: The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, adjusted for ambient conditions.

Generator nameplate capacity (installed): The maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer. Installed generator nameplate capacity is commonly expressed in megawatts (MW) and is usually indicated on a nameplate physically attached to the generator.

Generator Protection: Generation Protection refers to the use of a system of electrical relays to protect power generation equipment from damage due to power surges and other faults.

Generator Step-Up (GSU): Generator step up is done by transformers directly connected to the generator output terminals. This is usually done via busbars in large generating stations. They normally have a high voltage in secondary and high current in primary.

Genetic mutation: Sudden change in the chromosomal DNA of an individual gene. It may produce inherited changes in descendants. Mutation in some organisms can be made more frequent by irradiation (though this has never been demonstrated in humans).

Geologic assurance: State of sureness, confidence, or certainty of the existence of a quantity of resources based on the distance from points where coal is measured or sampled and on the abundance and quality of geologic data as related to thickness of over burden, rank, quality, thickness of coal, areal extent, geologic history, structure, and correlations of coal beds and enclosing rocks. The degree of assurance increases as the nearness to points of control, abundance, and quality of geologic data increases.

Geologic considerations: Conditions in the coal deposit or in the rocks in which it occurs that may complicate or preclude mining. Geologic considerations are evaluated in the context of the current state of technology and regulations, so the impact on mining may change with time.

Geologic sequestration: A type of engineered sequestration, where captured carbon dioxide is injected for permanent storage into underground geologic reservoirs, such as oil and natural gas fields, saline aquifers, or abandoned coal mines.

Geological and geophysical (G) costs: Costs incurred in making geological and geophysical studies, including, but not limited to, costs incurred for salaries, equipment, obtaining rights of access, and supplies for scouts, geologists, and geophysical crews.

Geological Exploration: Geological Exploration refers to the surveying of land resources to determine the presence of valuable metals, minerals, and ore.

Geological Mapping: Geological Mapping refers to mapping the location of mineral resources, rock formations, or other geological features.

Geological Modelling: Geological Modelling refers to the technique of using software tools

to predict the location of oil, gas, ore, and other geological deposits based on known information and direct measurement of the surrounding areas.

Geological repository: A mined facility for disposal of radioactive waste that uses waste packages and the natural geology as barriers to provide waste isolation.

Geometric Marking: Unusual design put on one side (like coating) of a coil to identify a different coating weight.

Geophysical Resistivity Meters: Geophysical Resistivity Meters are used to measure the electrical resistivity of an area being surveyed. Comparative analysis of the resistivity can be used to infer the locations of rock formations or ore deposits.

Geophysical Surveys: Geophysical Surveys refers to the practice of using a variety of ground measurements to infer information about an area's geology. Methods include measurements of electrical resistivity, electromagnetic radiation, and radar.

Geopressured: A type of geothermal resource occurring in deep basins in which the fluid is under very high pressure.

Geostationary satellite. : A special case of geosynchronous satellite with an orbital inclination of zero.

Geosynchronous satellite.: A satellite with a mean sidereal period of rotation about the primary body equal to the sidereal period of rotation of the primary body about its own axis. Remains in a fixed position above the primary body at 35,786km or 22,366 nautical miles.

Geosynthetic Lining: Geosynthetic Lining is an impermeable barrier material used as a separator in landfills, holding ponds, and leaching pits.

Geothermal energy: Hot water or steam extracted from geothermal reservoirs in the earth's crust. Water or steam extracted from geothermal reservoirs can be used for geothermal heat pumps, water heating, or electricity generation.

Geothermal plant: A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam that derives its energy from heat found in rock.

geothermal plant: A plant in which the prime mover is a steam turbine driven by steam that derives its energy from heat found in rocks or fluids beneath the surface of the earth. The energy is extracted from naturally occurring geothermal fields or by drilling and/or pumping.

Germanium: Chemical symbol Ge. A rare, grayish white metal chemically similar to tin; obtained from processing copper and zinc. Used in the production of infrared glasses, fiber optics, electronic detectors and semiconductors.

Geyser: A special type of thermal spring that periodically ejects water with great force.

GF: Ground Fault

GFCI (Ground Fault Circuit Interrupter): A personnel protection device that detects current leakage to ground on the load side and removes power to the receptacle.

Gfi, group format identifier. : (in x25 packet-switched networks) the first 4-bits in a packet header; contains the q bit, d bit and modulus value.

Gfm Gyrotory Forging Machine: A machine designed to hot forge a cylindrical bar shape while it is turning at speed.

G-GC: A portable power cable similar to type G, but also having a ground check conductor to monitor the continuity of the Grounding Circuit.

Ghosting: A coating defect consisting of an image on the freshly coated plate giving the appearance of the substrate being bent or darker in color.

gibi (Gi): Binary multiple prefix corresponding to gigabinary or 2^{30} or $(2^{10})^3$ or 1024^3 . [IEC 1998]

Giga: One billion

Giga: A numerical prefix denoting one billion as a gigacycle is one billion cycles

giga (G): Decimal multiple prefix corresponding to a billion(US) or 10^9 .

Gigabit: It is the measure of memory and equals to $1024 \times 1024 \times 1024$ bits. Short form GB.

Gigabit Ethernet Cards: A Gigabit Ethernet Card are cards used to transmit and receive data over ethernet at speeds better than 1000 Megabits (1 Gigabit).

Gigabit Ethernet Switch: A Gigabit Ethernet Switch is used to connect multiple computers the each other at Gigabit data transmission speeds.

GIGA-Hertz: One billion hertz equal to 1 KMC (1000 megacycles).

Gigawatt (GW): One billion watts or one thousand megawatts.

Gigawatt (GW): One billion watts. One million kilowatts. One thousand megawatts.

gigawatt : Unit of electric power equal to one billion watt, or one thousand megawatt.

Gigawatt-electric (GWe): One billion watts of electric capacity.

Gigawatthour (GWh): One billion watthours.

gilbert: The c.g.s. unit of magnetomotive force in electrostatic units. 1 gilbert = 10 A.

Gilding Metal: A copper zinc alloy containing 95% copper and 5% zinc. While similar to deoxidized copper in physical properties, it is somewhat stronger and very ductile. It has thermal and electrical conductivity slightly better than half that of electrolytic copper and corrosion resistance comparable to copper.

Gilsonite: Trademark name for uintaite (or uintahite), a black, brilliantly lustrous natural variety of asphalt found in parts of Utah and western Colorado.

Gin: A device used for temporary lifting.

GIS: Gas Insulated Switchgear (usually SF6).

Gland: A mechanical device that is used to contain a seal, o ring or gasket in a specified space to result in a leak proof connection between two or more mechanical components.

Gland Evacuation Pump: A pump that takes the water that has condensed from steam of the seals on the #9 Generator.

Gland Water: Same as seal water.

Glare: A sensation of uncomfortable brightness, usually coming from a luminaire at angles between horizontal and 45 degrees below horizontal.

glare: Condition of vision in which there is discomfort or a reduction in the ability to see significant objects, or both, due to an unsuitable distribution or range of luminance or to extreme contrasts in space or time.

Glass Braid: Used to provide thermal and/or mechanical protection to the underlying insulation of certain types of conductors.

Glass Fuses: A loose term describing a group of low voltage fuses, with glass or ceramic bodies, having dimensions smaller than midget fuses. Also called "miniature" fuses, they are typically $1/4" \times 1-1/4"$, $1/4" \times 1"$ or $5\text{mm} \times 20\text{mm}$. These fuses are used to protect electronic circuits or components.

Glazings: Clear materials (such as glass or plastic) that allow sunlight to pass into solar

collectors and solar buildings, trapping heat inside.

Glitch: it may be a indication of any temporary malfunction or fault in equipment.

Global climate change: See Climate change .

Global Positioning System: A system used for locating objects on Earth precisely, using a system of satellites in geostationary orbit in space. Often used by digital relays to obtain accurate time information.

Global Positioning System: The space based navigation system which provides the location and other information related to time and weather conditions by the help of satellites placed in space. Originally it was for use of military but after 1980 government made it publically use.

Global warming: An increase in the near surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is today most often used to refer to the warming some scientists predict will occur as a result of increased anthropogenic emissions of greenhouse gases.

Global warming potential (GWP): An index used to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time, such as 100 years.

glow discharge: Electric discharge in which the secondary emission from the cathode is much greater than the thermionic emission.

Glow Discharge: A fluorescent starter that starts a lamp very rapidly and will continue to try to start a failed lamp, resulting in the lamp flickering until the lamp is replaced.

GMT: Greenwich Mean Time

Gnd: Ground

GNP: Gross National Product

Gob: To leave in a mine coal and other materials that cannot be sold.

Gob Pile: A pile of loose waste material in a mine, or backfill waste material packed in stopes (steps or layers) to support the roof of a mine. A gob pile is also called a “honey” or “refuse” pile. This term is primarily used in underground mining.

Going Down: Term referring to moving the strip to the prime reel.

Gold: Chemical symbol Au. The heraldic metal. A rare yellow mineral that is the most malleable and pliable of all metals. Gold does not tarnish or corrode, and is unaffected by exposure to air or water.

good utility practice : Methods and practices that are approved by a significant portion of the utility industry.

GOR: Gasoline and oil-resistant wire

Gouging Abrasion: Abrasion involving gross surface indentation and possible removal of sizable metal fragments.

Government off-the-shelf (gots) : software and hardware components available through existing government contracts using proven and existing technology adhering to coe architectures and standards.

Government-owned stocks: Oil stocks owned by the national government and held for national security. In the United States, these stocks are known as the Strategic Petroleum Reserve.

Grain: An individual crystal in a polycrystalline metal or alloy, including twinned regions or subgrains if present.

Grain Boundaries: Bounding surface between crystals. When alloys yield new phases (as in cooling), grain boundaries are the preferred location for the appearance of the new phase. Certain deterioration, such as season cracking and caustic embrittlement, occur almost exclusively at grain boundaries.

Grain boundaries: The boundaries where crystallites in a polycrystalline material meet.

Grain Boundary Liquidation: An advanced stage of overheating in which material in the region of austenitic grain boundaries melts. Also known as burning.

Grain Boundary Sulfide Precipitation: An intermediate stage of overheating in which sulfide inclusions are redistributed to the austenitic grain boundaries by partial solution at the overheating temperature and reprecipitation during subsequent cooling.

Grain Coarsening: A heat treatment that produces excessively large austenitic grains.

Grain Fineness Number: A system developed by AFS for rapidly expressing the average grain size of a given sand. It approximates the number of meshes per inch of that sieve that would just pass the sample if its grains of uniform size. It is approximately proportional to the surface area per unit of weight of sand, exclusive of clay.

Grain Flow: Fiber like lines appearing on polished and etched sections of forgings, caused by orientation of the constituents of the metal in the direction of working during forging.

Grain Growth: An increase in the average size of the grains in polycrystalline metal or alloy, usually a result of heating at elevated temperature.

Grain Size: (1) For metals, a measure of the areas or volumes of grains in a polycrystalline material, usually expressed as an average when the individual sizes are fairly uniform. Grain sizes are reported in terms of grains per unit area or volume, average diameter, or as a grain size number derived from area measurements.

Grain Size Control: When a steel is austenitized by heating to above the critical range, time is required for the production of a Homogeneous structure during which there is a tendency towards grain growth. Although subsequent hot and cold working affect the grain size, it is originally controlled at the steel making stage by the addition of aluminium.

Grain Size Measurement: Grain size is normally quantified by a numbering system. Coarse 1 5 and fine 5 8. The number is derived from the formula $N = 2n + 1$ where n is the number of grains per square inch at a magnification of 100 diameters. Grain size has an important effect on physical properties. For service at ordinary temperatures it is generally considered that fine grained steels give a better combination of strength and toughness, whereas coarse grained steels have better machinability.

Grain Structure: Microstructure consisting of grains (crystals) and phases in metals; generally requires examination under a microscope of an etched, polished specimen for observation.

Grains: Individual crystals in metals.

Grains Of Moisture: A type of irregular surface produced when metal fractures, characterized by a rough, grain like appearance as differentiated from a smooth silky, or fibrous, type. It can be sub classified into trans granular and inter granular forms.. This type of fracture is frequently called crystalline fracture, but the implication that the metal has crystallized is completely misleading.

Granular Fracture : A type of irregular surface produced when metal is broken, that is characterized by a rough, grain like appearance as differentiated from a smooth silky, or fibrous, type. It can be sub classified into trans granular and inter granular forms. This type of fracture is frequently called crystalline fracture, but the inference that the metal has crystallized is not justified.

Granulated: A coarse grain or pebbly surface condition which becomes evident during drawing.

Granulation: The formation of grains immediately upon solidification.

graph of network: The geometric structure of the interconnection of the network elements which completely characterises the number of independent loop currents or the number of independent node-pair voltages necessary to study the network.

Graphical User Interface (GUI): An intuitive, graphical means of communicating information between computer-based devices and human users. GUIs can resemble the front panels of instruments or other objects associated with a computer program.

Graphite: The polymorph of carbon with a hexagonal crystal structure.

Graphite: Crystalline carbon used in very pure form as a moderator, principally in gas-cooled reactors, but also in Soviet-designed RBMK reactors.

Graphitization: Formation of graphite in iron or steel. Primary graphitization refers to formation of graphite during solidification. Secondary graphitization refers to later formation during heat treatment.

Graphitizing: A heating and cooling process by which the combined carbon in cast iron or steel is transformed, wholly or partly, to graphitic or free carbon.

Grass. : On a radar display, deflection from the time-base of a range amplitude display due to random electrical noise.

Grasshopper: A vibrating unit that is used to carry hot fines from the hot screens to the #21 conveyor belt. Also called the hot fines vibrator.

Gratebars: Spaced to allowed air to pass through the sinter mix for agglomeration/sintering process. They are located on the pallets on the sinter machine.

graticule: The CRT grid lines that facilitate the location and measurement of oscilloscope traces.

Gravimetric Feeder: A Gravimetric Feeder meters discharge via weight measurement.

Gravity Conveyors: A Gravity Conveyor is a non -driven conveyor system . It may uses rollers, bars, or other rotating elements to transport objects, usually downhill.

Gravity Die Casting: Gravity Die Casting is a die casting technique in which liquid metal is forced through the die cavity via gravity. The technique is similar to sand casting with the exception that a permanent die is used.

Gravity Filter: A unit of coal and sand media that utilizes gravity to draw water through it. The filter removes any solids carried over from the clarifiers.

Gravity Flow Diverter: Gravity flow diverters are used to control the quantity and direction of flow in gravity feed systems such as those used in the dry bulk industry. The diverters often include a plate which swings from one side to the other to control the leg of the diverter into which the material flows. Limit switches are typically used to control when the diverter plate moves from one position to another.

Gravity Hammer: A class of forging hammer wherein energy for forging is obtained by the

mass and velocity of a freely falling ram and the attached upper die. Examples are board hammers and air lift hammers.

Gravity Sand Filters: A Gravity Sand Filter is used to purify water. Water is forced through a bed of sand via gravity. The sand captures particulate in the water.

Gray: The SI unit of absorbed radiation dose, one joule per kilogram of tissue.

Gray Cast Iron: A cast iron that gives a gray fracture due to the presence of flake graphite. Often called gray iron.

Grease: 1) Slang for Cable Pulling Lubricant, a chemical compound used to reduce pulling tension by lubricating a cable when pulled into a duct or conduit. 2) Slang for Dielectric Grease, a silicone based chemical compound used to seal and lubricate connections

Grease Pumps: A Grease Pump is a pump that is designed for use with viscous fluids. They are often used as a way to dispense lubricants from bulk storage containers.

Grease System: Lubricating system that supplies grease to various parts of the finishing mill.

Grease System Timer: An electronic or mechanical device used to start a grease system at predetermined intervals.

Grease Traps: A Grease Trap is incorporated into a plumbing system to keep grease from entering the wastewater stream. They are used in many applications including food processing and restaurant industries.

Green pricing: In the case of renewable electricity, green pricing represents a market solution to the various problems associated with regulatory valuation of the nonmarket benefits of renewables. Green pricing programs allow electricity customers to express their willingness to pay for renewable energy development through direct payments on their monthly utility bills.

Green Rot: A form of high temperature attack on stainless steels, nickel chromium alloys and nickel chromium iron alloys subjected to simultaneous oxidation and carburization. Basically, attack occurs by first precipitating chromium as chromium carbide, then oxidizing the carbide particles.

Green Sand: A naturally bonded sand or a compounded molding sand mixture which has been tempered with water for use while still in the damp or wet condition.

Green Sand Core: A sand core used in the unbaked condition, also a core made from green sand and used as rammed.

Green Sand Mold: A mold composed of moist molding sand and not dried before being filled with molten metal.

Green Strength: The strength of a tempered sand mixture at room temperature.

Green Wavelength Laser Marker: Green wavelength laser markers are those that produce a beam with a wavelength of 532 nanometers, thereby generating a green laser beam within the visible spectrum. Green wavelength laser marking systems typically use a diode-pumped, solid state (DPSS) laser. See Diode-pumped Laser Marker.

Greenfield Steel Mill: New mill that is built from scratch, presumably on a green field.

Greenhouse effect: The result of water vapor, carbon dioxide, and other atmospheric gases trapping radiant (infrared) energy, thereby keeping the earth's surface warmer than it would otherwise be. Greenhouse gases within the lower levels of the atmosphere trap this radiation, which would otherwise escape into space, and subsequent re-radiation of some of this energy back to the Earth maintains higher surface temperatures than would occur if the gases were

absent.

Greenhouse effect: The effect of the Earth's atmosphere, due to certain gases, in trapping heat from the sun; the atmosphere acts like a greenhouse.

greenhouse effect : The greenhouse effect allows solar radiation to penetrate but absorbs the infrared radiation returning to space. It thus increases the mean global surface temperature of the earth caused by gases in the atmosphere (including carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbon).

Greenhouse gases: Those gases, such as water vapor, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride, that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

greenhouse gases: Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrocarbons, and chlorofluorocarbons. These provide the greenhouse effect.

Greenhouse gases: Gases that trap the heat of the sun in the Earth's atmosphere, producing the greenhouse effect; the two major greenhouse gases are water vapor and carbon dioxide; lesser greenhouse gases include methane, ozone, chlorofluorocarbons, and nitrogen oxides.

Grey Iron: Also known as flake iron on account of all or part of the carbon content being in the form of graphite distributed through the metal as flakes.

Grid: The layout of an electrical distribution system. See electric power grid.

grid: The layout of an electrical transmission and distribution system.

grid interconnection: A link between CEB Electricity system and Embedded Generator's Electricity System, made for the purpose of Exporting or Importing Electrical Energy.

Grid-connected (Photovoltaic: A Photovoltaic system in which the Photovoltaic array acts like a central generating plant, supplying power to the grid.

Grid-interactive (Photovoltaic: See 'Grid-connected (Photovoltaic system).'

Grinding: Process of removing metal by abrasion from bar or billet stock to prepare stock surfaces for forging. Occasionally used to remove surface irregularities and flash from forgings.

Grinding Cracks: Shallow cracks formed in the surface of relatively hard materials because of excessive grinding heat or the high sensitivity of the material.

Grinding Mills: A Grinding Mill is a general term that can be used to refer to a number of different ore processing machines, including ball mills, hammer mills, and gyratory mills. The purpose of a grinding mill is to break large solids into smaller, uniformly sized pieces by abrasion and crushing.

Grip: a flexible wire mesh cable holding device

Grip All Stick: See Shotgun Stick.

Gripper Bar Kink: A condition created by poor initial start on the reel or a loose first lap.

Grit: 1) Texture of the surface of a roll; applied through sand blasting and grinding; the lower the number, the higher the grit and the rougher the surface; 50, 90, 150, 200, and 220 grit. Temper Mills may run grit. Grit also refers to the finish on the surface of the steel. 2) The size of the shot blast used to mechanically texture a roll for producing a grit finish product.

Grooving Machines: A Grooving Machine is used to create a groove in a workpiece,

generally with a rotating saw blade. Grooving machines may incorporate features for precisely positioning the blade to set the groove depth and control the infeed rate of the part being grooved.

Gross additions to construction work in progress for the month: This amount should include the monthly gross additions for an electric plant in the process of construction.

Gross company-operated production: Total production from all company-operated properties, including all working and nonworking interests.

Gross domestic product (GDP): The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

Gross domestic product (GDP) implicit price deflator: The implicit price deflator, published by the U.S. Department of Commerce, Bureau of Economic Analysis, is used to convert nominal figures to real figures.

Gross energy intensity: Total consumption of a particular energy source(s) or fuel(s) by a group of buildings, divided by the total floor space of those buildings, including buildings and floor space where the energy source or fuel is not used, i.e., the ratio of consumption to gross floor space.

Gross gas withdrawal: The full-volume of compounds extracted at the wellhead, including nonhydrocarbon gases and natural gas plant liquids.

Gross generation: The total amount of electric energy produced by generating units and measured at the generating terminal in kilowatthours (kWh) or megawatthours (MWh).

gross generation : Amount of electric energy produced by generating units as measured at the generator terminals.

Gross head: A dam's maximum allowed vertical distance between the upstream's surface water (headwater) forebay elevation and the downstream's surface water (tailwater) elevation at the tail-race for reaction wheel dams or the elevation of the jet at impulse wheel dams during specified operation and water conditions.

Gross input to atmospheric crude oil distillation units: Total input to atmospheric crude oil distillation units. Includes all crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases, slop oils, and other liquid hydrocarbons produced from tar sands, gilsonite, and oil shale.

Gross inputs: The crude oil, unfinished oils, and natural gas plant liquids put into atmospheric crude oil distillation units.

Gross national product (GNP): The total value of goods and services produced by the nation's economy before deduction of depreciation charges and other allowances for capital consumption. It includes the total purchases of goods and services by private consumers and government, gross private domestic capital investment, and net foreign trade.

Gross vehicle weight rating (GVWR): Vehicle weight plus carrying capacity.

Gross withdrawals: Full well stream volume from both oil and gas wells, including all natural gas plant liquids and nonhydrocarbon gases after oil, lease condensate, and water have been removed. Also includes production delivered as royalty payments and production used as fuel on the lease.

Gross working interest ownership basis: Gross working interest ownership is the

respondent's working interest in a given property plus the proportionate share of any royalty interest, including overriding royalty interest, associated with the working interest. Gross working interest. The reporting company's working interest plus the proportionate share of any basic royalty interest or overriding royalty interest related to the working interest.

Ground: The electric neutral line having the same potential as the surrounding earth; the negative side of a direct current power system; the reference point for an electrical system.

Ground: The common return path for current in an electrical circuit. Serves as a reference point for measuring all other potentials in a circuit. Generally assumed to be at zero potential with respect to the earth. Other than earth references may be used such as the chassis of an automobile (chassis ground) or some arbitrary point in a circuit (circuit ground) like the negative side of the power source.

Ground: 1. An electrical term meaning to connect to the earth. 2. A conducting connection, whether intentional or accidental by which an electric circuit, or equipment, is connected to the earth or some conducting body that serves in place of the earth.

ground: A conducting connection, either intentional or accidental, between an electric circuit or equipment and the Earth or some conducting body serving in place of the Earth.

Ground: A large conducting body (such as the earth) used as a common return for an electric circuit and as an arbitrary zero of potential.

Ground: Ground is the reference point for electrical circuit for voltage measurement and the common return path to electric current.

Ground: An electrical term meaning to connect to the earth or other large conducting body to serve as an earth thus making a complete electrical circuit.

Ground Anchors: A Ground Anchor is used to hold structure to the surrounding earth. Different anchoring strategies are available depending on situation and ground composition, and may include cables, screws, and concrete footings as part of a system.

Ground Check Conductor: A conductor used in mining cables to monitor the continuity of the grounding circuit, so that a discontinuity or "open" in the grounding circuit causes the power conductors to be de-energized. Also called a "ground monitoring" conductor. Used in Types G-GC, SHD-GC, and MPF-GC. Abbreviated "GC"; identified by yellow colored insulation.

Ground clutter. : An area of heavy returns extending for a few miles in all directions from a radar site, caused by radar reflections from the earth's surface. The pattern on a ppi scope is relatively circular and constant.

Ground Conductor: A conductor (normally non-current carrying) which is intentionally connected to earth ground (it is identified as the bare or green conductor) to provide an intentional path for fault current to ground.

Ground controlled approach (gca) system. : A system of radionavigation comprising a surveillance radar element (sre) and a precision approach radar (par and spar) element for the operation of a ground controlled approach.

Ground controlled interception (gci). : In aviation, the technique of directing an aircraft towards another from a ground radar, both being observed on the same display. The information is transmitted to the aircraft by radio.

Ground Fault: An undesired current path between ground and an electrical potential.

Ground Fault: A ground fault occurs when electricity travels outside an intended path and

tries to get to the ground by the shortest route. If you touch electricity while you are touching the ground and something this is resting on ground. Your body becomes electricity's shortest route to ground.

Ground Fault Circuit Interrupter: A device intended for the protection of personal that functions to de-energize a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than required to operate the overcurrent protection device of the supply circuit.

ground fault interruption: A unit or combination of units which provides protection against ground fault currents below the trip levels of the breakers of a circuit.

Ground Fault Protection of Equipment: A system intended to provide protection of equipment from damaging line to ground fault currents by operating to cause a disconnecting means to open all ungrounded conductors of the faulted circuit. This protection is provided at current levels less than those required to protect conductors from damage through the operations of a supply circuit overcurrent device.

ground fault : An undesired path that allows current to flow from a line to ground.

Ground Flat Stock: Annealed and pre ground (to close tolerances) tool steel flats in standard sizes ready for tool room use. These are three common grades; water hardening, oil hardening, and air hardening quality.

ground loop: The condition of having two or more ground references in a common system. When two or more grounds have a potential difference between them, current can flow. This flow of current is a new circuit or loop which can interfere with the normal operation of the system.

Ground returns. : Wanted echoes received from the ground by an airborne radar.

Ground Roll Finish: The bright or smooth microfinish on the last stand of a tandem mill or temper mill; produced by grinding; determines the surface finish of the product where brightness is desired.

Ground segment. : Comprises of the communications sub-system's which controls the communications traffic through the satellite. See also space segment.

ground state: The most stable energy state of a nucleus, atom or molecule.

Ground Support Cable: A cable construction, usually rugged and heavy, for use in ground support control or power systems.

Ground wave (1). : A radio wave which travels between a transmitting and a receiving aerial situated above the earth which includes the direct wave, the ground-reflected wave and the surface wave; the ground-reflected wave and the surface wave are affected by the properties of the ground; the direct wave and the ground reflected wave may be refracted in the troposphere.

Ground wave (2). : In radar:a.)The direct transference of radio-frequency energy from a radar transmitter to its associated receiver. b.the term is also used to describe the effect on the display of this transference of energy from the associated transmitter.

Ground/earth.: The term applied to any conductor common to a number of circuits and which serves to maintain a constant potential, or to provide a bond of very small impedance between the points of connection to it. In many cases, the earth itself is used as the conductor.

Grounded Conductor: A system or circuit conductor that is intentionally grounded, usually gray or white in color.

Grounded Conductor: A system or circuit conductor that is intentionally grounded; usually colored white.

grounded neutral : The common neutral conductor of an electrical system which is intentionally connected to earth to provide a current carrying path for the line to neutral load devices.

Grounded, effectively: Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the buildup of voltages that may result in undue hazards to connect equipment or to persons.

Grounding: An adapter that converts a two wire receptacle opening to a two pole three wire grounding receptacle opening.

Grounding Conductor: A conductor used to connect metal equipment enclosures and/or the system grounded conductor to a grounding electrode, such as the ground wire run to the water pipe at a service; also may be a bare or insulated conductor used to ground motor frames, panel boxes, and other metal equipment enclosures used throughout electrical systems. In most conduit systems, the conduit is used as the ground conductor.

Grounding Conductor: A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes; usually colored green.

Grounding Electrode: The conductor used to connect the grounding electrode to the equipment grounding conductor, to the grounded conductor, or to both, of the circuit at the service equipment or at the source of a separately derived system.

Grounding Equipment Conductor: The conductor used to connect the noncurrent-carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor, the grounding electrode conductor, or both, of the circuit at the service equipment or at the source of a separately derived system.

Grounding Parts: Parts that are intentionally connected to ground.

Grounding Resistors: Grounding Resistors are designed to provide added safety to industrial distribution systems by limiting ground fault current to reasonable levels.

Grounding terminal: A designated terminal screw or pressure wire connector located on the internal wall of the field wiring compartment for connection to an equipment grounding conductor from the panelboard.

Grounding Transformers: A grounding transformer intended primarily to provide a neutral point for grounding purposes.

Group: A group is a logical grouping of assemblies with similar characteristics. All assemblies in a group have the same initial average enrichment, the same cycle/reactor history, the same current location, the same burnup, the same owner, and the same assembly type.

Group 3: A petroleum products spot market trading hub based in Tulsa, Oklahoma that serves the U.S. Mid-Continent region.

Group name: The DOE/EIA-assigned name identifying a composite supply source (i.e., commonly metered gas streams from more than one field), which is often the case in contract areas, field areas, and plants. A group name can also be a pipeline purchase (i.e., FERC Gas Tariff, Canadian Gas, Mexican Gas, and Algerian LNG). Emergency purchases and short term purchases are also group names. Group Code - The DOE/EIA-assigned code identifying a

composite supply source.

Group quarters: Living arrangement for institutional groups containing ten or more unrelated persons. Group quarters are typically found in hospitals, nursing or rest homes, military barracks, ships, halfway houses, college dormitories, fraternity and sorority houses, convents, monasteries, shelters, jails, and correctional institutions. Group quarters may also be found in houses or apartments shared by ten or more unrelated persons. Group quarters are often equipped with a dining area for residents.

Group, address. : See address group.

Group, check. : See check group.

Grout Pigs: A Grout Pig is used in the construction of wells. Once the well has been drilled, a steel casing is inserted into the well. Grout (cement) is used to anchor the casing to the surrounding rock and soil. Grout is pumped into the casing; the grout pig is then driven down the casing, forcing grout up the outside walls of the casing from the bottom, where it is allowed to cure. After curing, the grout pig is removed.

Grout Pipes: A Grout Pipe is used to pump grout to the bottom of a well during well construction.

Grunt: A lineman's helper.

GSA: (General Services Administration, Federal Supply Service) The U.S. Government administration responsible for the approval of Federal Specifications used in the purchase of products by all Federal agencies.

Gsm. : Group special mobile (gsm) a pan european standard for cellular mobile telephone networks.

Gstn, general switched telephone network. : Same as public telephone network.

GTO: Gate Turnoff Thyristor

GTO: Gas tube sign and oil-burner ignition cable. 5,000V-15,000V

Guard (radio communication). : To maintain a continuous receiver watch with transmitter ready for immediate use. A complete log is to be kept. See copy (radio communication) and cover (radio communication).

Guard, radio communication. : See communication guard, radio.

Guardband (1). : The unused bandwidth separating channels to prevent crosstalk in an fdm system.

Guardband (2).: A narrow frequency band between 2 channels to provide a safety margin against mutual interference

Guarded: Covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats, or platforms, designed to minimize the possibility, under normal conditions, of approach or accidental contact by persons or objects. Note Wires which are insulated, but not otherwise protected, are not considered as guarded.

Guarded frequency. : In electronic warfare, an enemy frequency used as a source of intelligence.

Guide: Device for holding the metal in the proper position, during rolling, or slitting.

Guide Scratch: Scratches or marks appearing parallel to edges of cold rolled strip caused by scale or other particles which have become imbedded in or have adhered to the rolling mill guide. Also applies to similar scratches appearing as a result of slitting.

Guillotine Valve: A slide plate type valve which blocks the flow of material through a line.

Guillotines: A Hydraulic Guillotine is used to separate material with a shearing motion. The shearing force is provided by hydraulic power.

gull. : In electronic warfare, a floating radar reflector used to simulate a surface target at sea for deceptive purposes.

Gun Drill: A drill, usually with one or more flutes and with coolant passages through the drill body, used for deep hole drilling.

Gut: Slang for "Line Hose".

Guy Strain Insulator: An insulator, normally porcelain, used to electrically isolate one part of a down guy from another. Guy Strain Insulators are made by Porcelain Products.

GVW: Gross Vehicle Weight

GW: see Gigawatt

Gwe : See Gigawatt-electric.

GWh: see Gigawatthour

GWP: see Global Warming Potential

Gypsum: Calcium sulfate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) a sludge constituent from the conventional lime scrubber process, obtained as a byproduct of the dewatering operation and sold for commercial use.

Gyratory Crushers: A Gyratory Crusher is used to crush bulk solids, generally in ore processing applications. The crushing action is provided by eccentric motion (wobble) of a cone inside a outer conical chamber. Large pieces of ore are fed into the top of the crusher; they are crushed into smaller and smaller pieces until finally exiting through the bottom of the crusher.

H: Henry.

H: Shielded power cable. Multi-conductor cables have paper or varnished cambric insulation applied directly over individual conductors. Spiralled metallic shielding tape over insulation with overall protective covering.

H :

H₂: Hydrogen.

H-20: Also referred to as "HS2044" or "H2044" Bridge Loading. H20 Loading refers to a maximum front wheel loading of 8000 lbs and a maximum rear wheel load of 16,000 lbs with an impact factor of 30% added (16000×1.30) for a total maximum wheel loading of 2

H20-44: See "H20"

hadfield Manganese Steel: A specially steel which is austenitic and usually contains approximately 12% Manganese. It is used in mining, earth moving equipment and in railroad track work.

Half Hard Temper: (A) In low carbon cold rolled strip steel, produced by cold rolling to a hardness next to but somewhat softer than full hard temper. (B) In brass mill terminology, half hard is two B&S numbers hard or 20.70% thickness reduction. (C) In Stainless Steel Strip, Tempers are based on minimum tensile or yield strength. For Chromium Nickel grades Half Hard Temper 150,000 T.S., 110,000 Y.S.Min.

Half Nut: A lever operated mechanism that resembles a split nut that can be closed on the lead screw of a lathe when threads are being.

half wave rectifier: A rectifier with only one diode in series with the load. The output is a half-wave rectified voltage with the other half wave being at zero voltage.

half wave symmetry: A function has half-wave symmetry when one half of its waveform is exactly the negation of the previous half of the waveform.

Half-Duplex: The data transmission system which allow to transmit in one direction at a time.

Half-duplex communications: A communications system in which data can travel in both directions, but only in one direction at a time.

Half-duplex communications: it is the communication system in which device allow to speak one person at a time .

Half-duplex operation. : Communication between two points in a single direction only. A half duplex facility is exactly half of a full-duplex facility, and is not the same as a simplex facility.

Half-life: The time it takes for an isotope to lose half of its radioactivity.

half-life: The time taken for the activity of a radioactive isotope to decay to half of its original value. In other words the time taken for half the atoms present to disintegrate.

Half-life: The period required for half of the atoms of a particular radioactive isotope to decay and become an isotope of another element.

halide: Binary compound of one of the halogen elements (fluorine, chlorine, bromine or iodine).

hall effect: If an electric current flows in a wire placed in a strong transverse magnetic field, a potential difference is developed across the wire, at right angles to both the magnetic field and the wire.

halogen lamp: Gas-filled lamp containing a tungsten filament and a small proportion of halogens.

Halogen Method: The plating solution basis at WSC; other methods include ferrosan and MSA (methyl sulfonic acid).

Halogenated substances: A volatile compound containing halogens, such as chlorine, fluorine or bromine.

Hammer Crusher: A Hammer Crusher, also known as a hammer mill, is used in ore processing to reduce the size of feed material. The crushing action is provided by the impact of hammers attached to a spinning rotor inside the housing.

Hammer Forging: Forging in which the work is deformed by repeated blows. Compare with press forging.

Hammer Mills: A Hammer Mill, also known as a hammer crusher, is used in ore processing to reduce the size of feed material. The crushing action is provided by the impact of hammers attached to a spinning rotor inside the housing.

Hand Hook: A tool made of steel rod used to push crane spreader arms apart or pull together.

Hand loading: An underground loading method by which coal is removed from the working face by manual labor through the use of a shovel for conveyance to the surface. Though rapidly disappearing, it is still used in small-tonnage mines.

Hand Shears: Tool used in cutting steel plate.

Handling Mark: See ?Mark, Handling?

Handset. : Part of telephone containing mouthpiece and receiver.

Handshake, handshaking. : A preliminary procedure, usually part of a communications protocol, to establish a connection.

Hanger Bearings: Hanger Bearings are used to provide support to a rotating shaft. The

bearing housing includes a structural mounting point that allows the bearing to hang below the supporting frame and has strength to support the weight of the driveline.

Hanging Scales: Hanging Scales measure lifted weight. Crane scales and spring scales are types of hanging scales.

Hard Chromium: Chromium deposited for engineering purposes, such as increasing the wear resistance of sliding metal surfaces, rather than as a decorative coating. It is usually applied directly to basis metal and is customarily thicker than a decorative deposit.

hard disk: A rigid metal magnetic disk used for mass storage.

Hard Drawing: Drawing metal wire through a die to reduce cross section and increase tensile strength.

Hard Drawn: Wire that has been drawn to its specific size and not annealed.

Hard Drawn: drawn to produce the great hardness

Hard Drawn Copper Wire: Copper wire that has been drawn to size and not annealed.

Hard Drawn Spring Steel Wire: A medium high carbon cold drawn spring steel wire. Used principally for cold wound springs.

Hard Line: A Steel Pulling line. Also see Bull Line.

Hard Metal Facing: A method of increasing the wear resistance of a metal by the deposition of a hard protective coating. Alloys such as Stellite or a metallic carbide are most often used for the coating.

Hard Metals: A group of materials more commonly known as cemented carbides. They consist of mixtures of one or more of the finely divided carbides of tungsten, titanium, tantalum and vanadium embedded in a matrix of cobalt or nickel by sintering. Widely used for cutting tools where for many applications they have replaced conventional high speed steels

Hard Temper: (A) (For steel see Full Hard Temper) (B) In brass mill terminology. Hard Temper is four B&S numbers hard or 37.1% reduction.

Hardener: An alloy containing at least some aluminum and one or more added elements for use in making alloying additions to molten aluminum. Also referred to as ?Master Alloy?.

Hardness Tester: Hardness Testing is a method to determine the hardness of a material. Generally, this refers to the indentation hardness. There are several methods for testing indentation hardness, including Rockwell, Vickers, and Brinell hardness tests.

Hardware. : Equipment (as opposed to a computer program or a method of use), such as mechanical, electrical, magnetic or electronic devices. Compare with firmware and software.

Harmonic: The presence of harmonics that change an AC waveform from sinusoidal to complex. They can cause unacceptable disturbance to electronic equipment.

harmonic: A frequency that is a multiple of the fundamental frequency. For example, 100 Hz is the second harmonic of 50 Hz, 150 Hz is the third harmonic, and so forth.

Harmonic: A harmonic is a signal or wave whose frequency is an integral (whole-number) multiple of the frequency of some reference signal or wave. The term can also refer to the ratio of the frequency of such a signal or wave to the frequency of the reference signal or wave.

Harmonic Analysis: Harmonic Analysis is a method for deconstructing individual signal frequencies from a complex waveform. As an example, harmonic analysis can be used to determine discrete vibration resonance frequencies from experimentally measured vibration data as a function of time.

Harmonic Distortion: Condition associated with the critical speed of the shaft in a turbine.

Harmonic Distortion: A sinusoidal component of the voltage that is a multiple of the fundamental wave frequency.

harmonic distortion: The presence of harmonics that change the AC voltage waveform from a simple sinusoidal to complex waveform. Harmonic distortion can be generated by a load and fed back to the AC utility line, causing power problems to other equipment on the same circuit.

Harmonic Distortion: The ratio of the sum of the powers of all harmonic components to the power of the fundamental frequency.

Harmonic Filters: Harmonic Current Filters are used to suppress harmonic frequencies in line current that can result from the presence of non linear load in the power system.

Harmonic. : An integral multiple of a fundamental frequency.

harmonized standard : A standard which has been drawn up by common agreement between national standards bodies notified to the European Commission by all member states and published under national procedures.

Harness: A term used to describe a group of conductors laid parallel or twisted by hand, usually with many breakouts, laced together or pulled into a rubber or plastic sheath, used to interconnect electrical circuits.

hash function.: A (mathematical) function, which maps values from a large (possibly very large) domain into a smaller range. A “good” hash function is such that the results of applying the function to a (large) set of values in the domain will be evenly distributed (and apparently at random) over range.

Hash Mark Stripe: A non-continuous, helical stripe applied to a conductor for circuit identification.

Haulage cost: Cost of loading ore at a mine site and transporting it to a processing plant.

Hazard Risk Category: Categories defined by NFPA 70E2004 to explain protection levels needed when performing tasks. The values range from 1 to 4. ATPV rated PPE is required for categories 1 through 4 as follows 1 4 cal/cm²; 2 8 cal/cm²; 3 25 cal/cm²; 4 40 cal/cm².

Hazardous Area Glands: Hazardous Area Glands are specially designed cable glands with consideration to explosive and/or corrosive environments.

Hazardous Area Lighting: Hazardous Area Lighting is used in areas where special consideration must be taken in regards to the service environment, typically concerning explosion risk.

Hazardous atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from an enclosed space), injury, or acute illness from one or more of the following causes

H-Bridge: The electronic circuit that enables a voltage to be applied across a load in either direction.

HC: Two or more conductor heater cord, asbestos and rubber insulation with cotton braid over each conductor. Twisted, no overall covering.

HCFC: See Hydrochlorofluorocarbon

HCPV: High concentrating photovoltaic

HDD: See Heating Degree Days.

Hdlc, high-level data link control. : The international standard communications protocol

(similar to sdlc). Defined by iso 3309.

HDP: High density polyethylene

HDPE Pipes: HDPE (High Density Polyethylene) pipes are used for a variety of applications, including domestic and industrial water piping. HDPE is resistant to most solvents, relatively strong, and economical to produce.

Hdx, half-duplex transmission. : Transmission in either direction but not in both directions simultaneously. Compare with full-duplex transmission.

Head: The measure of pressure at the base or other reference point of a column of fluid. Normally measured in feet of water.

Head: The product of the water's weight and a usable difference in elevation gives a measurement of the potential energy possessed by water.

Head Metal: The reservoir of metal in the feeder or riser of a mold.

Head-end unit. : (in lan technology) an item of hardware on a single or dual cable broadband network using split frequency bands to provide multiple services.

Header Valves: A Header Valve is a valve that allows for the removal of combustion gas in an internal combustion engine. The valve vents into the exhaust manifold, also known as a header.

Header. : The control information added to the beginning of a message - either a transmission block or a packet.

Headroom: The overhead of margin, expressed in decibels, by which a communications system exceeds minimum requirements.

Headstock: The fixed or stationary end of a lathe or similar machine tool.

Heap leach solutions: The separation, or dissolving-out from mined rock of the soluble uranium constituents by the natural action of percolating a prepared chemical solution through mounded (heaped) rock material. The mounded material usually contain slow grade mineralized material and/or waste rock produced from open pit or underground mines. The solutions are collected after percolation is completed and processed to recover the valued components.

Heat Affected Zone 2: That portion of the base metal which was not melted during brazing, cutting, or welding, but whose microstructure and physical peoperties were altered by the heat.

Heat Check: Fine cracks in the forging dies caused by excessive heat or extended use without polishing. The pattern of these ?heat checks? is reproduced on the forged part.

Heat content: The amount of heat energy available to be released by the transformation or use of a specified physical unit of an energy form (e.g., a ton of coal, a barrel of oil, a kilowatthour of electricity, a cubic foot of natural gas, or a pound of steam). The amount of heat energy is commonly expressed in British thermal units (Btu). Note Heat content of combustible energy forms can be expressed in terms of either gross heat content (higher or upper heating value) or net heat content (lower heating value), depending upon whether or not the available heat energy includes or excludes the energy used to vaporize water (contained in the original energy form or created during the combustion process). The Energy Information Administration typically uses gross heat content values.

Heat Cover: A cylindrical or rectangular inner cover placed over the coils prior to placing the furnace on the base in the Batch Anneal.

Heat Distortion: Distortion or flow of a material or configuration due to the application of heat.

Heat Number: In the Batch Anneal, this is the computerized annealing sequence number used by the Firing Model to associate target values to the Heat Sequence. It is required to run the Firing Model. In the BOP a sequential number assigned to each batch of steel.

Heat Of Steel: The product of a single melting operation in a furnace, starting with the charging of raw materials and ending with the tapping of molten metal and consequently identical in its characteristics.

Heat pump: Heating and/or cooling equipment that, during the heating season, draws heat into a building from outside and, during the cooling season, ejects heat from the building to the outside. Heat pumps are vapor-compression refrigeration systems whose indoor/outdoor coils are used reversibly as condensers or evaporators, depending on the need for heating or cooling.

Heat pump: Like an air conditioner or refrigerator, a heat pump moves heat from one location to another. In the cooling mode, heat pumps reduce indoor temperatures in the summer by transferring heat to the ground. Unlike an air conditioning unit, however, a heat pump's cycle is reversible. In winter, a heat pump can extract heat from the ground and transfer it inside. The energy value of the heat thus moved can be more than three times the cost of the electricity required to perform the transfer process.

Heat pump (air source): An air-source heat pump is the most common type of heat pump. The heat pump absorbs heat from the outside air and transfers the heat to the space to be heated in the heating mode. In the cooling mode the heat pump absorbs heat from the space to be cooled and rejects the heat to the outside air. In the heating mode when the outside air approaches 32o F or less, air-source heat pumps loose efficiency and generally require a back-up (resistance) heating system.

Heat pump (geothermal): A heat pump in which the refrigerant exchanges heat (in a heat exchanger) with a fluid circulating through an earth connection medium (ground or ground water). The fluid is contained in a variety of loop (pipe) configurations depending on the temperature of the ground and the ground area available. Loops may be installed horizontally or vertically in the ground or submersed in a body of water.

Heat pump efficiency: The efficiency of a heat pump, that is, the electrical energy to operate it, is directly related to temperatures between which it operates. Geothermal heat pumps are more efficient than conventional heat pumps or air conditioners that use the outdoor air since the ground or ground water a few feet below the earth's surface remains relatively constant throughout the year. It is more efficient in the winter to draw heat from the relatively warm ground than from the atmosphere where the air temperature is much colder, and in summer transfer waste heat to the relatively cool ground than to hotter air. Geothermal heat pumps are generally more expensive (\$2,000-\$5,000) to install than outside air heat pumps. However, depending on the location geothermal heat pumps can reduce energy consumption (operating cost) and correspondingly, emissions by more than 20 percent compared to high-efficiency outside air heat pumps. Geothermal heat pumps also use the waste heat from air-conditioning to provide free hot water heating in the summer.

Heat rate: A measure of generating station thermal efficiency commonly stated as Btu per kilowatthour. Note Heat rates can be expressed as either gross or net heat rates, depending

whether the electricity output is gross or net generation. Heat rates are typically expressed as net heat rates.

heat rate : A measure of generating station thermal efficiency and generally expressed as BTU per net kWh. The heat rate is computed by dividing the total BTU content of the fuel burned (or of heat released from a nuclear reactor) by the resulting net kWh generated.

Heat Resistant Alloy: An alloy developed for very high temperature service where relatively high stresses (tensile, thermal, vibratory or shock) are encountered and where oxidation resistance is frequently required.

Heat Run Test: A test that is used to determine the increase in operating temperature at a given load.

Heat Seal: In cabling, a method of sealing a tape wrap jacket by means of thermal fusion.

Heat Shock: A test to determine stability of a material by sudden exposure to a high temperature for a short period of time.

Heat sink: A device attached to a component to aid in the dissipation of heat.

heat sink: A mass of metal attached to the case of a transistor or other device to allow the heat to escape more easily and prevent overheating of the transistor or device.

Heat Sink: This is the heat exchanger unit which dissipate the heat from the system and transfer in to surroundings. In Electronics it is used in computers to cool the central processing Unit.

Heat Sink: A metal plate used for absorbing or removing heat for the switching device in a dimmer or fan speed control

Heat Sink Dimmer/Fan Speed Control: Any dimmer or fan speed control that mounts onto a NEMA standard switch box and onto the surface of the wall itself. Heat sink dimmers and fan controls will not accept a traditional wall plate and usually are supplied with their own unique cover.

Heat Spreader: the contact surface used between heating component and heat sink in Central processing unit of computer or other electronic machine. Generally copper materials is used as a Heat Spreader because of its thermal conductivity.

Heat Tinting: Colouration of a metal surface through oxidation by heating to reveal details of structure.

Heat Treat Stain: A discoloration due to non uniform oxidation of the metal surface during solution heat treatment

Heat Treatable Alloy: An alloy which may be strengthened by a suitable thermal treatment

Heated floorspace: The area within a building that is space heated.

Heated Hoses: Heated Hoses incorporate a flexible electric heating element underneath the hose jacket to prevent fluid from freezing in cold conditions.

Heater: An electro mechanical device that converts electricity into heat, normally for use in raising the temperature of fluid stored in a reservoir or tank.

Heating Degree Days (HDD): A measure of how cold a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the average of the day's high and low temperatures from the base temperature (65 degrees), with negative values set equal to zero. Each day's heating degree days are summed to create a heating degree day measure for a specified reference period. Heating degree days are used in energy analysis as an indicator of

space heating energy requirements or use.

Heating equipment: Any equipment designed and/or specifically used for heating ambient air in an enclosed space. Common types of heating equipment include central warm air furnace, heat pump, plug-in or built-in room heater, boiler for steam or hot water heating system, heating stove, and fireplace. Note A cooking stove in a housing unit is sometimes reported as heating equipment, even though it was built for preparing food.

Heating intensity: The ratio of space-heating consumption or expenditures to square footage of heated floor space and heating degree-days (base 65 degrees Fahrenheit). This ratio provides a way of comparing different types of housing units and households by controlling for differences in housing unit size and weather conditions. The square footage of heated floor space is based on the measurements of the floor space that is heated. The ratio is calculated on a weighted, aggregate basis according to the following formula Heating Intensity = Btu for Space Heating / (Heated Square Feet * Heating Degree-Days).

Heating stove burning wood, coal, or coke: Any free-standing box or controlled-draft stove; or a stove installed in a fireplace opening, using the chimney of the fireplace. Stoves are made of cast iron, sheet metal, or plate steel. Free-standing fireplaces that can be detached from their chimneys are considered heating stoves.

Heating value: The average number of British thermal units per cubic foot of natural gas as determined from tests of fuel samples.

Heaviside layer. : One of the layers of the ionosphere.

Heavy Coating: A condition caused by too much coating being applied to the strip.

Heavy gas oil: Petroleum distillates with an approximate boiling range from 651 degrees Fahrenheit to 1000 degrees Fahrenheit.

Heavy Gauge: Product with a thickness above the customer's maximum gauge tolerance.

Heavy metals: Metallic elements, including those required for plant and animal nutrition, in trace concentration but which become toxic at higher concentrations. Examples are mercury, chromium, cadmium, and lead.

heavy oil: The fuel oils remaining after the lighter oils have been distilled off during the refining process. Except for start-up and flame stabilization, virtually all petroleum used in steam plants is heavy oil.

Heavy rail: An electric railway with the capacity for a "heavy volume" of traffic and characterized by exclusive rights-of-way, multi-car trains, high speed and rapid acceleration, sophisticated signaling, and high platform loading. Also known as "subway," elevated (railway), "metropolitan railway (metro)."

Heavy water: Water containing a significantly greater proportion of heavy hydrogen (deuterium) atoms to ordinary hydrogen atoms than is found in ordinary (light) water. Heavy water is used as a moderator in some reactors because it slows neutrons effectively and also has a low cross section for absorption of neutrons.

Heavy water: Water containing an elevated concentration of molecules with deuterium ("heavy hydrogen") atoms.

Heavy water reactor (HWR): A reactor which uses heavy water as its moderator, e.g., Canadian CANDU (pressurized HWR or PHWR).

Heavy/Light Gauge: Steel plate not meeting customer gauge specifications.

Heavy-water-moderated reactor: A reactor that uses heavy water as its moderator. Heavy

water is an excellent moderator and thus permits the use of inexpensive natural (unenriched) uranium as fuel.

hectare: A measure of large area. 1 hectare = 100 are = 104 m²

hecto (h): Decimal multiple prefix corresponding to a hundred or 10². This is not a preferred suffix.

Hedging: Taking an opposite position in the commodity futures market to your position in the physical market.

Hedging: The buying and selling of futures contracts so as to protect energy traders from unexpected or adverse price fluctuations.

Hedging contracts: Contracts which establish future prices and quantities of electricity independent of the short-term market. Derivatives may be used for this purpose.

Helical: Wrapped in a spiral fashion. Refers to the way the strands of a conductor are laid.

Helical: Having the helix-like helix cuts on round section. Or formed into helix shape like helix spring.

Helical Screw Feeders: A Helical Screw Feeder is a material conveyor that consists of a screw rotating inside a tube. As the screw rotates, material is carried through the length of the tube.

Helical Stripe: A continuous, colored, spiral stripe applied over the outer perimeter of an insulated conductor for circuit identification purposes.

Heliograph. :

Heliostat: A mirror that reflects solar rays onto a central receiver. A heliostat automatically adjusts its position to track daily or seasonal changes in the sun's position. The arrangement of heliostats around a central receiver is also called a solar collector field.

Helix: A path formed as a point advances uniformly around a cylinder as the thread on a screw or the flutes on a drill.

Helix: A spiral winding.

Hematite: The oxide of iron of highest valency which has a composition close to the stoichiometric composition Fe₂O₃.

Henry: The meterkilogramsecond unit of inductance, equal to the inductance of a circuit in which an electromotive force of one volt is produced by a current in the circuit which varies at the rate of one ampere per second.

Henry: An electrical unit denoting the inductance of a circuit in which a current varying at the rate of one ampere per second produces an electromotive force of one volt.

Henry (H): The unit of inductance in which an induced electromotive force of one volt is produced when the current is varied at the rate of one ampere per second. Named for Joseph Henry, an American physicist who performed extensive studies of electromagnetic phenomena.

henry (H): SI unit of electric inductance. One henry is equal to the inductance of a closed circuit in which an electromotive force of 1 volt is produced when the electric current in the circuit varies uniformly at the rate of 1 ampere per second.

Henry Hub: A pipeline hub on the Louisiana Gulf coast. It is the delivery point for the natural gas futures contract on the New York Mercantile Exchange (NYMEX).

Herringbone: See ?Streak, Herringbone?

Hertz: 1) A unit of frequency equal to one cycle per second. 2) In alternating current, the

changing of the negative and positive poles.

Hertz: The SI unit of Frequency. Denoted by Hz.

Hertz (Hz): Unit of frequency, defined as one cycle per second. Hierarchal: Method of organizing computer programs with a series of levels, each with further subdivisions.

Hertz (Hz): A unit of frequency equal to one cycle per second. Named for Heinrich Hertz, a German physicist who was the first to produce radio waves artificially.

hertz (Hz): SI unit of frequency. One hertz is equal to one cycle per second.

Hertzian waves. : Electromagnetic waves having frequencies below those of infra-red. Waves.

Heterojunction: A region of electrical contact between two different semiconductor materials.

heuristic: A method of solving mathematical problems for which no algorithm exists. Involves the narrowing down of the field of search for a solution by inductive reasoning from past experience of similar problems.

Hex: A term used for anything shaped like a hexagon.

hexadecimal: A number system consisting of 16 symbols, namely 0 to 9 and A to E.

Hexadecimal. : A digital system that has 16 states, 0 through 9 followed by a through f. Any 8-bit byte can be represented by 2 hexadecimal digits.

HFC: See Hydrofluorocarbon

Hickey: A coating defect consisting of a randomly oriented small speckled appearance on coated plate after inks are applied.

HID: High-Intensity Discharge

HID: High Intensity Discharge

HID lamp: High Intensity Discharge lamp

Hierarchical switching. : (in lan technology). Similar to star switching; the switching is done in stages.

High Alloy Steel: Ferrous alloy with more than 12 weight percent of noncarbon additions.

High Angle Conveyors: A High Angle Conveyor is used to convey material when a large lifting height is required over a short distance. Two common methods are employed: Pocket Belt, which uses a pocketed belt design to prevent material from falling; and Sandwich Belt, which uses two parallel belts to apply compression and sandwich the material.

High Brass: 65% A copper zinc alloy containing 35% zinc. Possesses high tensile strength. Used for springs, screws, rivets, etc.

High Carbon Steel 2: Steel with more than 0.3% carbon. The carbon that is dissolved in the iron, the less formable and the tougher the steel becomes. High carbon steel's hardness makes it suitable for plow blades, shovels, bedsprings, cutting edges, or other high wear applications.

High efficiency ballast: A lighting conservation feature consisting of an energy-efficient version of a conventional electromagnetic ballast. The ballast is the transformer for fluorescent and high-intensity discharge (HID) lamps, which provides the necessary current, voltage, and wave-form conditions to operate the lamp. A high-efficiency ballast requires lower power input than a conventional ballast to operate HID and fluorescent lamps.

High efficiency lighting: Lighting provided by high-intensity discharge (HID) lamps and/or fluorescent lamps.

High Frequency Coil: A high frequency coil is designed with primary and secondary windings that are loosely coupled. This design results in a transformer circuit in which energy is alternately transferred from one resonant circuit to the other over many cycles. The result is a very high voltage gain at high frequencies. High frequency coils are often used today in transformers for electronic and computer devices.

High grade messaging. : A hgm service is the mechanism for exchanging critical information and official correspondence throughout defence organisations and with its partners, in a manner optimised to meet stringent requirements for assurance of delivery, Survivability, reliability, ease of use, security, integrity, non-repudiation and archiving commensurate with a general-purpose service. (cceb/nato)

High Inertia Load: These are loads that have a relatively high flywheel effect. Large fans, blowers, punch presses, centrifuges, commercial washing machines and other types of similar loads can be classified as high inertia loads.

High Intensity Discharge (HID) Lamp: An electric discharge lamp in which the light producing arc is stabilized. Examples of HID lamps include High Pressure Sodium, Metal Halide and Mercury Vapor.

High Intensity Discharge (HID) Lamp: A type of arc lamp which produce the light by electric arc induced by the tungsten electrodes. in the transparent fused quartz

high intensity discharge HID lamp: A type of lamp that may consist of mercury vapor, metal halide, high pressure sodium, or low pressure sodium.

high pass filter: A filter designed to pass all frequencies above its cut-off frequency.

High Pot: A test done to confirm the reliability of an insulation system where a high voltage is applied.

High pressure: . A processing unit operating at either equal to or greater than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

High Pressure Hoses: High Pressure Hose is hose designed to resist rupture under large pressures. It is typically reinforced with steel or similar material to provide increased radial strength.

High Pressure Hydraulic Pumps: A High Pressure Hydraulic Pump is designed to produce a large pressure increase. Designs feature special considerations to protect against backflow and rupture due to the large pressure difference between the input and output stages of the pump.

High Pressure Metering Valves: A High Pressure Metering valve is used to control flow rates with precision. They are designed to work reliable with high pressure differentials.

High Pressure Mold: A strong high density mold, made by air, hydraulic, or other squeeze process.

High Pressure Regulators: A High Pressure Regulator is used to dispense compressed fluid stored under high pressure at a lower pressure.

High Pressure Sodium (HPS) Lamp: A High Intensity Discharge light source in which the arc tube's primary internal element is Sodium Vapor.

high rupturing capacity fuses, HRC fuses: The HRC fuse is usually a high-grade ceramic barrel containing the fuse element. The barrel is usually filled with sand, which helps to quench the resultant arc produced when the element melts. They are used for high current applications.

High Speed Fuses: Fuses with no intentional time-delay in the overload range and designed to open as quickly as possible in the short-circuit range. These fuses are often used to protect solid-state devices.

High Speed Spindles: A spindle is a general term used to describe any rotating, cylindrical device used to perform a task. For example, high speed spindles are used in tools such as a CNC machines or tools for sanding, polishing and routing. The tooling component, such as a bit, is attached to the spindle by a nut, called a collet, that tightens down onto the shaft of the bit.

High Speed Steel: The term "high speed steel" was derived from the fact that it is capable of cutting metal at a much higher rate than carbon tool steel and continues to cut and retain its hardness even when the point of the tool is heated to a low red temperature. Tungsten is the major alloying element but it is also combined with molybdenum, vanadium and cobalt in varying amounts. Although replaced by cemented carbides for many applications it is still widely used for the manufacture of taps, dies, twist drills, reamers, saw blades and other cutting tools.

High Strength Low Alloy: (HSLA) A specific group of steel in which higher strength, and in some cases additional resistance to atmospheric corrosion or improved formability, are obtained by moderate amounts of one or more alloying elements such as columbium, vanadium, titanium, used alone or in combination.

High Stress Grinding Abrasion: Abrasion that occurs when the abrasive is crushed between two opposing surfaces.

High Sulfur Diesel (HSD) fuel: Diesel fuel containing more than 500 parts per million (ppm) sulfur.

High Temperature Valves: A High Temperature Valve is a flow control device designed for operation at elevated temperature.

High Temperature Wire: High temperature wire is any electrical conductor designed such that the conductor and insulation material are capable of operating effectively in high temperature applications. Thermocouple wires are a common example of high temperature wire.

high tension , HT: High voltage.

High Voltage: An electric power system having a maximum rms ac voltage above 72.5 kilovolts (kv).

High Voltage: the voltage greater than 1500V for DC and 1000V for AC which is used to power distribution.

High voltage direct current (HVDC) converter station: A facility that functions as an electrical rectifier (ac-dc) to control and transmit power in a high voltage network. There are two types of HVDC valves the mercury arc valve and the present-day technology solid state thyristor valve. Both types of valves present a fire risk due to high voltage equipment that consists of oil-filled converter transformers, wall bushings, and capacitors in addition to various polymeric components.

high voltage direct current transmission, hvdc transmission: power transmission carried out at high voltage direct current.

High Voltage Fuses: High voltage fuses are used to protect the electrical system in a substation from power transformer faults. They are switched for maintenance and safety.

High Voltage Fuses: Fuses rated 34,500 volts and above.

High Voltage System: An electrical system or cable designed to operate between 46kv and 230kv.

high voltage test: A test which consists of the application of a specified voltage higher than the rated voltage between windings and frame, or between two or more windings, for the purpose of determining the adequacy of insulating materials and spacing against breakdown under normal conditions. [It is not the test of the conductor insulation of any one winding.]

High Voltage Underground Cables: High voltage cables are designed to carry high voltage current and are constructed in many different ways, but are usually shielded cables. They are made with a conductor, conductor-strand shielding, insulation, semi-conducting insulation shielding, metallic insulation shielding, and a sheath.

High wind: A wind of such velocity that the following hazards would be present

High-intensity discharge (HID) lamp: A lamp that produces light by passing electricity through gas, which causes the gas to glow. Examples of HID lamps are mercury vapor lamps, metal halide lamps, and high-pressure sodium lamps. HID lamps have extremely long life and emit far more lumens per fixture than do fluorescent lights.

High-level wastes: Extremely radioactive fission products and transuranic elements (usually other than plutonium) in spent nuclear fuel. They may be separated by reprocessing the spent fuel, or the spent fuel containing them may be regarded as high-level waste.

Highly (or High)-enriched uranium (HEU): Uranium enriched to at least 20% U-235. (In weapons it is about 90% U-235.)

High-mileage households: Households with estimated aggregate annual vehicle mileage that exceeds 12,500 miles.

High-power tests: Tests in which fault currents, load currents, magnetizing currents, and line-dropping currents are used to test equipment, either at the equipment's rated voltage or at lower voltages.

high-pressure mercury (vapor) lamp: Mercury vapor lamp, with or without a coating of phosphor, in which during operation the partial pressure of the vapor is of the order of 105 pa.

high-pressure sodium (vapour) lamp : Sodium vapour lamp in which the partial pressure of the vapour during operation is of the order of 104 pa.

High-speed reclosing: A reclosing scheme where reclosure is carried out without any time delay other than required for deionization.

High-temperature collector: A solar thermal collector designed to operate at a temperature of 180 degrees Fahrenheit or higher.

High-voltage tests: Tests in which voltages of approximately 1000 volts are used as a practical minimum and in which the voltage source has sufficient energy to cause injury.

Highwall: The unexcavated face of exposed over-burden and coal in a surface mine.

Hindered Contraction: Casting contraction during solidification and cooling which is hindered by mold or core restraints.

Hinshaw pipeline: A pipeline or local distribution company that has received exemptions from regulations pursuant to the Natural Gas Act. These companies transport interstate natural gas not subject to regulations under NGA.

HiPot: high potential. It is safety terms given to the electrical instruments for verification of

current leakage which may occur due to internal capacitance of the equipment.

histogram: A type of graphical representation, used in statistics, in which the frequency distribution is expressed by rectangles.

Hit, hf high interest track broadcast. : All source non real-time broadcast compiled by the hit broadcast active unit using jots1 terminal from rmp, data links, command systems and signal traffic.

Hi-Z: The term used to denote the high impedance. It may be referred to the equipment or input output of greater than 1000 ohms.

HMI: Human Machine Interface

HMP: High molecular weight polyethylene.

Hob: A cylindrical cutting tool shaped like a worm thread and used in industry to cut gears.

Hold: Coil type indicating that a produced coil or lift has problems that need to be resolved by the Quality Assurance department.

Hold Coil: A processed coil that does not meet customer specifications that needs to be held for disposition.

Hold Down Rolls: Two small rolls used for holding force on the top of the strip as it runs through slitter knives.

Hold Ticket: A ticket used to quarantine out of spec material.

Holder. : An entity to whom some privilege has been delegated either directly from the source of authority or indirectly through another attribute authority.

Holding company: A company that confines its activities to owning stock in and supervising management of other companies. The Securities and Exchange Commission, as administrator of the Public Utility Holding Company Act of 1935, defines a holding company as "a company which directly or indirectly owns, controls or holds 10 percent or more of the outstanding voting securities of a holding company" (15 USC 79b, par. a (7)).

Holding pond: A structure built to contain large volumes of liquid waste to ensure that it meets environmental requirements prior to release.

Hole: Void in rolled product. Typical cause is a non metallic inclusion during rolling

hole: In a crystal lattice, a point which has been vacated by an electron.

Hole: The vacancy where an electron would normally exist in a solid; behaves like a positively charged particle.

Hole Punch: A piece of equipment used to put small holes in the strip where welds are made. Use of the hole punch is specified by all customers. Used for weld detection.

Hole Saw: A cutting tool used to cut a circular groove into solid material.

Hollow Drill Test (Trepanning): Removing a cylindrical sample from a metal section or structure to determine soundness of the section.

Hollow Extrusions: Hollow Extrusions are any extruded shape that contains internal holes. Whereas solid extrusions can be made with a single die, hollow extrusions generally require multi-part dies.

Hollow Structural Sections: Known in the market as HSS, this is high strength, cold formed, electric welded structural tubing welded steel tubing used as structural elements in a broad range of construction and architectural applications, structural components for vehicles and industrial machinery, buildings and other structures, and a variety of manufactured products. It is produced in round, square and rectangular shapes and a broad range of sizes. Structural

tubing's basic advantages lie in its high strength to weight ratio, attractive appearance and cost effectiveness.

Home RF: Home Radio Frequency. It is the wireless networking specification.

Home Run: Also known as star topology, a cabling system where individual cables are run directly from the telecommunications closet to each information outlet.

Home-on-jam : An adaptation of active or semi-active radar guidance systems to give them a homing guidance system capability when their normal radar guidance capability is disrupted by jamming.

HomePlug: the name given to the specification categories of power line communications.

homing (1). : The technique whereby a mobile station directs itself, or is directed, towards a source of primary or reflected energy, or to a specified point.

Homing (2). : In automatic telephony, the operation of a selector or similar device in returning to a predetermined normal condition following the release of the connection.

Homing station (homer). : A radio aid to navigation incorporating df facilities.

Homogenizing: Is a process whereby ingots are raised to temperatures near the solidus temperature and held at that temperature for varying lengths of time. The purposes of this process are to (1) reduce microsegregation by promoting diffusion of solute atoms within the grains of aluminum and (2) improve workability

Homogenizing Annealing: An annealing treatment carried out at a high temperature, approaching the solidus temperature, for a sufficiently long time that inhomogeneous distributions of alloying elements are reduced by diffusional processes.

Homojunction: The region between an n-layer and a p-layer in a single material photovoltaic cell.

Honing Stones: Honing Stones are manufactured abrasive stones used for honing. They are typically specified not only for size, but also grain type, grit size, and hardness.

Hook: An abrupt deviation from straightness. Hook can be caused by non uniform metal flow during breakthrough. See also "Bow"?

hooke's law: Within the elastic limit, a strain is proportional to the stress producing it.

Hooks: See "Climbers".

Hookstick: An insulated stick, usually made of fiberglass, that is used to work energized overhead conductors and operate electrical equipment.

Hook-up Wire: A wire used for low current, low voltage (under 1000V) applications internally within enclosed electronic equipment.

Hoppers: A hopper is a temporary storage container, usually for bulk solids. They are typically filled from the top, and can be emptied from the bottom.

Horizontal Aerators: A Horizontal Aerator is a used to inject oxygen via surface agitation into raw sewage as part of an activated sludge process in a sewage treatment or industrial wastewater plant. Horizontal aerators float on the surface and have a series of rotors that are driven to churn the water.

Horizontal Axis Casting Machine: A centrifugal casting machine in which the axis of rotation of the mold is horizontal.

Horizontal axis wind turbine: The most common type of wind turbine where the axis of rotation is oriented horizontally. Also see Wind turbine.

Horizontal Ball Mills: A Horizontal Ball Mill is used to grind large solids into smaller

pieces. It consists of a rotating horizontal cylinder filled with balls (typically steel). As the cylinder rotates, the hard balls grind the solids into the desired size.

Horizontal Cabling: The portion of the wiring system extending from the workstation to the horizontal cross-connect in the telecommunications closet.

Horizontal Cross-Connect: The cross-connection between horizontal and other cabling, such as backbone cabling.

Horizontal Length: The cable distance from the workstation to the telecommunications closet cross-connect, a maximum of 295 ft. (100 meters).

Horizontal Stripe: A colored stripe running horizontally with the axis of a conductor, sometime called a longitudinal stripe, used as a means of circuit identification.

Horizontal Vibrating Screens: A Horizontal Vibrating Screen is used to sort bulk solids by size. Ore is placed on top of the screen and ore smaller than the screen size fall through the screen as a vibration is applied.

Horsepower: A unit for measuring the rate of work (or power) equivalent to 33,000 foot-pounds per minute or 746 watts.

Horsepower: A unit of work. When used to show power usage, one horsepower is equivalent to 746 watts.

Horsepower (Hp): The measure of energy used in description of the normal power level in a system. 1 horsepower = 550 lb. ft./minute of work.

horsepower (hp): A method of rating motors. 1 hp = 0.746 kW

Horsepower Rated: A device having a marked horsepower rating intended for control of motor loads.

Hose: Slang for "Line Hose".

Hose: Hoses are the pipe line to transfer the fluids. Hose may be of different materials depending upon the fluid to pass.

Hose Connectors: A Hose connector is used to connect two hoses together. If the hoses are of different sizes, a hose connector might also be referred to as a reducer.

Hose Couplings: A House Coupling is used to join the ends of one or more hoses.

Hospital Grade: A device constructed to meet performance requirements of high abuse areas found in hospital locations, tested to "Hospital Grade" requirements of Underwriters Laboratories Standard UL498

Hospital Only: A connector which is listed by Underwriters Laboratories INC for use in health care facilities.

Host computer. : The central computer (or one of a collection of computers) in a data communications system which provides the primary data processing functions such as computation, data base access, or special programs or programming languages; often shortened to "host".

Host government: The government (including any government-controlled firm engaged in the production, refining, or marketing of crude oil or petroleum products) of the foreign country in which the crude oil is produced.

Hot: A device that is used to temporarily extend a conductor beyond the cross arm it was on.

Hot: having a high degree of heat or a high temperature

Hot Arm: Refers to an energized conductor or apparatus.

Hot Bands: See Hot Rolled Sheets.

Hot Box Process: A furan resin based process similar to shell coremaking; cores produced with it are solid unless mandrelled out.

Hot Briquetted Iron (HBI): Direct reduced iron that has been processed into briquettes. Instead of using a blast furnace, the oxygen is removed from the ore using natural gas and results in a substance that is 90% 92% iron. Because DRI may spontaneously combust during transportation, HBI is preferred when the metallic material must be stored or moved.

Hot Dip: In steel mill practice, a process whereby ferrous alloy base metals are dipped into molten metal, usually zinc, tin, or terne, for the purpose of fizing a rust resistant coating.

Hot Dip: A term denoting the covering of a surface to be coated into a molten bath of the coating material.

Hot Dip Coating: A metallic coating obtained by dipping the substrate into molten metal.

Hot dry rock: Heat energy residing in impermeable, crystalline rock. Hydraulic fracturing may be used to create permeability to enable circulation of water and removal of the heat.

Hot End: The section of a steelmaking complex from the furnace up to, but not including, the hot strip mill.

Hot Metal: The name for the molten iron produced in a blast furnace. It proceeds to the basic oxygen furnace in molten form or is cast as pig iron.

Hot Metal Stamping: Hot Metal Stamping refers to a stamping process in which the sheet metal has been heated prior to placement in the die. The heated sheet metal has improved formability over traditional cold stamping techniques.

Hot Quenching: Cooling in a medium, the temperature of which is substantially higher than room temperature.

Hot Roll: Product that is sold in its as produced state off the Hot Mill with no further reduction or processing steps aside from being pickled and oiled (if specified).

Hot Roll Base: Hot rolled coils which have been pickled in an acid solution to remove surface oxidation, then is oiled to prevent rust. Coils that come directly off of No. 5 Pickler and were not cold roll reduced on the tandem mill. These coils will usually have a 20 ID. (Outside supplied hot roll base may have a 24 ID).

Hot Rolled Sheets: Manufactured by hot rolling slabs to the required thickness.

Hot Rolling Mill: See Hot Mill.

Hot Screens: A device used to remove hot fines that are less than one fourth millimeter in diameter from the sinter before it goes to the cooler.

Hot Short: Brittleness in hot metal.

Hot Shortness: Brittleness in metal in the hot forming range.

Hot Spot: Dark gray or black surface patches appearing after anodizing. These areas are usually associated with lower hardness and coarse magnesium silicide precipitate Caused by non uniform cooling after extrusion.

Hot Stand By: Describes the status of a boiler that is not in use and not down for repairs, but that is on 225 warm up steam and maintaining 200 psi of steam pressure with oil fire.

Hot Strength (Sand): Tenacity (compressive, shear or transverse) of a sand mixture determined at any temperature above room temperature.

Hot Strip Mill: A mill that rolls reheated slabs into coils. Also, Hot Mill.

Hot Tear: A crack or fracture formed prior to completion of metal solidification as a result of hindered contraction. A hot tear is frequently open to the surface of the casting and is

commonly associated with design limitations.

Hot Top: (1) A reservoir, thermally insulated or heated, to hold molten metal on top of a mold to feed the ingot or casting as it contracts on solidifying to avoid having pipe or voids.

Hot tub: Water-filled wood, plastic, or ceramic container in which up to 12 people can lounge. Normally equipped with a heater that heats the water from 80 degrees to 106 degrees Fahrenheit. It may also have jets to bubble the water. The water is not drained after each use. An average-size hot tub holds 200 to 400 gallons of water. All reported hot tubs are assumed to include an electric pump. These are also called spas or jacuzzis.

hot wire instrument: An electrical instrument which depends upon the expansion (or change of resistance) of a wire which is heated by the passage of an electric current.

Hot Working: Plastic deformation of metal at a temperature sufficiently high not to create strain hardening. The lower limit of temperature for this process is the recrystallization temperature.

Hotstick: An insulated stick, usually made of fiberglass, that is used to work energized overhead conductors and operate electrical equipment that is overhead, underground and pad mounted.

Hot-Swap: This is the replacement of hard drives and CD ROMs in ase of computer system failure.

Hours under load: The hours the boiler is operating to drive the generator producing electricity.

house service meter: Energy meter at a consumer's premises, measuring power in kWh.

Household: A family, an individual, or a group of up to nine unrelated persons occupying the same housing unit. "Occupy" means that the housing unit is the person's usual or permanent place of residence.

Household energy expenditures: The total amount of funds spent for energy consumed in, or delivered to, a housing unit during a given period of time.

Housing: The inner side of the #1 and #2 feeders.

Housing Unit: Steel device used to hold the billy roll in place between the slitter heads and knives.

Housing unit: A house, an apartment, a group of rooms, or a single room if it is either occupied or intended for occupancy as separate living quarters by a family, an individual, or a group of one to nine unrelated persons. Separate living quarters means the occupants (1) live and eat separately from other persons in the house or apartment and (2) have direct access from the outside of the buildings or through a common hall--that is, they can get to it without going through someone else's living quarters. Housing units do not include group quarters such as prisons or nursing homes where ten or more unrelated persons live. A common dining area used by residents is an indication of group quarters. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.

HPD: Rubber and asbestos-insulated heater cord. No braid on individual conductors but with braid overall. Also made with neoprene insulation and no asbestos or PVC/NBR.

HPN: Two-conductor, neoprene-insulated heater cord. Parallel construction. For use in damp locations.

Hpo, high-performance option. : Same as d1 conditioning.

HPS: High Pressure Sodium

Hr: Hot rolling Rolling steel slabs into flat rolled steel after it has been reheated.

HRC: High Rupturing Capacity (applicable to fuses).

HRC fuse: [see high rupturing capacity fuse]

Hrc Fuses: HRC (High Rupture Capacity) fuses are fuses that are filled with silica sand and are used in scenarios where protection is required from a heavy current overload. When an HRC fuses blows, the sand acts as an insulator and prevents current from arcing across the blown fuse.

HS: Rubber and asbestos-insulated heater cord. Cotton serve and rubber-jacketed overall. For use in damp locations #14 or #12 conductors. Also made with neoprene insulated inners and asbestos.

HS20-44: See "H20"

HS285 (TM): Aluminum Conductor, Steel Supported with Extra High Strength Steel Core. HS285 is a Trademark of Southwire Company.

HSJ: Same as type HS but with #18 or #16 conductors and differing thickness of jacket.

HSJO: Same as type HSJ but with neoprene jacket.

Hsla: High Strength Low Alloy Steel. Steel with relatively high strength and impact properties. The carbon level is low and the alloying additions are significantly less than 5 weight percent.

HSO: Neoprene jacketed heater cord.

HSR: High Speed Reclosing.

Hss Drill Bits: HSS (High Speed Steel) Drill Bits are cutting tools for drilling holes. HSS refers to tool steels alloyed with tungsten to retain hardness at elevated temperatures.

HTGR: High Temperature Gas-cooled Reactor

Hub: A boss that is in the center of the forging and forms a part of the body of the forging.

hub: A wiring concentrator used in local area networks.

Hub: Equipment which serves as a centralized connection point for a network or a portion of network. Hubs contain multiplexing, switching, and bridging functions and are not considered part of the cabling infrastructure.

Hub height: In a horizontal-axis wind turbine, the distance from the turbine platform to the rotor shaft.

Hub. : (in lan technology) the centre or a star topology network or cabling system.

Human Body Model: the dummy model of the Human body used to study different types of the case in electrical and electronics to see the effects and the reactions of human in case of related cases.

Human Machine Interface: A Human Machine Interface is general term used to describe the system that an operator uses to control a machine. It may refer to a simple mechanical interface or the combination of mechanical and software interfaces.

Humidifier: A humidifier adds moisture to the air (often needed in winter when indoor air is very dry). It may be a portable unit or attached to the heating system.

Humidity: The moisture content of air. Relative humidity is the ratio of the amount of water vapor actually present in the air to the greatest amount possible at the same temperature.

humidity: The humidity of the atmosphere is a measure of the water vapour present in the air.

Hunt group. : Same as rotary

Hunting: Tendency for a system to oscillate continuously.

HV: High Voltage.

HV: High voltage

hv high voltage: exceeding 1000 V between conductors and 600 V between conductors and earth.

HVAC: An abbreviation for the heating, ventilation, and air-conditioning system; the system or systems that condition air in a building.

HVAC conservation feature: A building feature designed to reduce the amount of energy consumed by the heating, cooling, and ventilating equipment.

HVAC DSM program: A DSM (demand-side management) program designed to promote the efficiency of the heating or cooling delivery system, including replacement. Includes ventilation (economizers; heat recovery from exhaust air), cooling (evaporative cooling, cool storage; heat recovery from chillers; high-efficiency air conditioning), heating, and automatic energy management systems.

HW: Radio hookup wire with polyvinyl insulation. With or without nylon jacket, braid or shield, 2500V.

Hybrid Cable: A multi-conductor cable containing two or more types of component.

Hybrid Photovoltaic System: A photovoltaic system that includes other sources of electric generation such as wind or fossil fuel.

Hybrid system: A Photovoltaic system that includes other sources of electricity generation, such as wind or diesel generators.

Hybrid transmission line: A double-circuit line that has one alternating current and one direct circuit. The AC circuit usually serves local loads along the line.

Hydraulic Balance: A condition of equal opposed hydraulic forces acting on a part in a hydraulic component.

Hydraulic Boom Truck Cranes:

Hydraulic Bottle Jacks: A Hydraulic Bottle Jack is a device that uses a hydraulic cylinder to provide a mechanical lifting advantage.

Hydraulic Brakes: A hydraulic brake uses fluid power to stop motion by transferring and amplifying force from a control unit (e.g., a brake pedal) into mechanical braking mechanism (e.g., brake caliper).

Hydraulic Buffers: A Hydraulic Buffer is a device used to dampen and reduce impact or recoil force via fluid transfer.

Hydraulic Control: A control, which is actuated by hydraulically induced forces.

Hydraulic Cranes: A Hydraulic Crane uses fluid power to provide lifting force. Hydraulic cranes are used widely in construction and other heavy industry.

Hydraulic Crimping Tools: Hydraulic Crimping Tools use fluid power to increase an applied operator force to a suitable crimping force. They are most typically used for heavy gauge wire applications.

Hydraulic Cutting Tools: A Hydraulic Cutting Tool uses fluid power to increase applied operator force in to a suitable cutting force. They are used for cutting large diameter wire, cable, and even steel rebar.

Hydraulic Cylinder Piston: A Hydraulic Cylinder Piston is a component inside a hydraulic cylinder. It divides the cylinder into two chambers. The piston is allowed to slide inside the cylinder, but seals against the inside of the cylinder with a rubber o-ring or seal. A increase in

fluid pressure on either side of the piston will cause the piston to move up (or down) in the cylinder; in this manner, a change in pressure is converted to linear motion. A piston rod is attached to one end of the piston and exits the cylinder through a sealed rod gland.

Hydraulic Cylinders: A Hydraulic Cylinder is a device for converting pressure change into mechanical motion. The cylinder has two chambers separated by a piston. A hydraulic pump generates a pressure difference between the chambers by alternately filling (push stroke) and removing (pull stroke) fluid from each chamber. This pressure difference creates motion of the piston inside the cylinder body. A piston rod is attached to the piston and behaves as a linear actuator in response to the movement of the piston.

Hydraulic Filters: A Hydraulic Filter removes particulate from a hydraulic system. This is critical as grit introduced into the system can degrade and destroy seals and precision sliding surfaces in the system.

Hydraulic Flanges: A Hydraulic Flange is used to interface fluid power components together. It is typically a machined precision surface with a seal and can either be threaded or bolted to the component. They are designed to withstand the large internal pressures that can be seen in hydraulic systems without mechanical failure.

Hydraulic fracturing: Fracturing of rock at depth with fluid pressure. Hydraulic fracturing at depth may be accomplished by pumping water into a well at very high pressures. Under natural conditions, vapor pressure may rise high enough to cause fracturing in a process known as hydrothermal brecciation.

Hydraulic Gear Motors: A Hydraulic Gear Motor converts fluid pressure into rotary motion. Fluid pumped into the inlet side of the gear motor flows past two closely fitting gears, causing the gears to rotate, which drives an output shaft.

Hydraulic Gear Pumps: A Hydraulic Gear Pump creates a hydraulic pressure from the mechanical rotation of gears. Fluid on the intake side of the gears is forced through to the output side as the tightly fitting gears rotate and mesh.

Hydraulic head: The distance between the respective elevations of the upstream water surface (headwater) above and the downstream surface water (tailwater) below a hydroelectric power plant.

Hydraulic Hoses: Hydraulic Hoses are used to carry fluid between fluid power components. They are generally pressure rated for applications and incorporate reinforcement, such as steel braid, to prevent catastrophic failure.

Hydraulic Jacks: A Hydraulic Jack is a device that uses fluid power to provide lifting force. It can be thought of as two cylinders connected in series, used to provide a mechanical advantage.

Hydraulic Lifting Equipment: Hydraulic Lifting Equipment is any technology that uses fluid power to produce a lifting force. This includes both simple cylinder jacks as well as sophisticated hydraulic systems like those used in earth moving equipment.

Hydraulic Machine Press: A Hydraulic Machine Press is used to provide a large increase in force with fluid power. They can be used for forming, stamping, bending, and other common manufacturing processes.

Hydraulic Manifold: A component of a hydraulic system that functions as a delivery point for the hydraulic pressures needed to run the different cylinders in that system. Both the A. G. C. and the C.V.C. systems use manifolds.

Hydraulic Motors: See FLUID MOTOR.

Hydraulic Nut Splitters: A Hydraulic Nut Splitter is a device that is used to remove nuts or other mechanical fasteners that have seized or otherwise become stuck and must be destroyed to be removed. Fluid power is used to drive a wedge shaped ram into the nut and provide the force necessary for splitting.

Hydraulic Oil: The oil that is pumped under pressure to supply force to the different cylinders.

Hydraulic Power: See FLUID POWER.

Hydraulic Presses: A Hydraulic Press is used to provide a large increase in force with fluid power. They can be used for forming, stamping, bending, and other common manufacturing processes.

Hydraulic Pullers: A Hydraulic Puller is used to remove bearings, pulleys and other components from shafts. They use fluid power to provide uniform axial force.

Hydraulic Rams: A Hydraulic Ram is a mechanical actuator driven by a hydraulic cylinder that is used to apply compressive force.

Hydraulic Rods: A Hydraulic Rod is a component in a hydraulic cylinder. Also known as a piston rod, it serves as the mechanical actuator of the cylinder and moves in and out of the cylinder as pressure acts on the piston.

Hydraulic Rope Excavators: A Hydraulic Rope Excavator is excavating equipment, similar to crane or bucket lifter, that uses both hydraulic cylinders and mechanical pulleys to provide motion and lifting force.

Hydraulic Seals: Hydraulic Seals are used to prevent fluid leaks in hydraulic systems. They must be able to withstand operating pressures. Some hydraulic seals must also be able to slide with components, such as in a hydraulic piston seal.

Hydraulic Stack: A component of the auxiliary hydraulic system that controls oil flow to an individual function of the system.

Hydraulic Stand: A component of the auxiliary hydraulic system that is made up of many hydraulic stacks.

Hydraulic Steering Gear: A hydraulic steering gear is a component used in automobile power steering systems that utilize a hydraulic pump to deliver the steering assist. The steering wheel column is usually connected to a torsion bar that transfers torque from the steering wheel to the wheels. The steering gear is located between the torsion bar and the wheel drive system in order to transfer torque.

Hydraulic Toe Jacks: A Hydraulic Toe Jack is used to lift heavy equipment. The toe refers to a specially designed ram with a lifting surface offset to the action of the cylinder. This feature allows a toe jack to be used to lift equipment that is too low to the ground for a common bottle jack to be placed under.

Hydraulic Tools: Hydraulic Tools are any tools that use fluid power to apply force, such as shears, hammers, or crimpers.

Hydraulic Turbines: A Hydraulic Turbine is used in power generation. Mechanical power is created by the rotation of a shaft driven by the flow of water through the turbine.

Hydraulic Valve: A Hydraulic Valve is used to control the flow of hydraulic fluid. Valves can be manually or electronically actuated, and are used to direct flow between the two sides of hydraulic cylinder.

Hydraulic Winches : Hydraulic Winch: A Hydraulic Winch is a winch that uses a hydraulic gear motor to drive spool rotation.

Hydrazine. : A colourless liquid used as a propellant for the initial positioning and subsequent altitude and/or orbital control manoeuvres of a space vehicle.

Hydro Turbine Power Generation: Hydro Turbine Power Generation uses flowing water to drive a turbine connected to an electric generator to produce power. This is the typical scenario in a hydroelectric dam, where water on the high side of the dam is allowed to flow past the turbine on its way to the low side of the dam, driving the turbine in the process. The mechanical energy of the spinning turbine is converted to electrical power by the generator.

Hydrocarbon: An organic chemical compound of hydrogen and carbon in the gaseous, liquid, or solid phase. The molecular structure of hydrocarbon compounds varies from the simplest (methane, a constituent of natural gas) to the very heavy and very complex.

hydrocarbon: Organic compounds which contain only carbon and hydrogen.

Hydrocarbon gas liquids (HGL): A group of hydrocarbons including ethane, propane, normal butane, isobutane, and natural gasoline, and their associated olefins, including ethylene, propylene, butylene, and isobutylene. As marketed products, HGL represents all natural gas liquids (NGL) and olefins. EIA reports production of HGL from refineries (liquefied refinery gas, or LRG) and natural gas plants (natural gas plant liquids, or NGPL). Excludes liquefied natural gas (LNG).

Hydrochlorofluorocarbons (HCFCs): Chemicals composed of one or more carbon atoms and varying numbers of hydrogen, chlorine, and fluorine atoms.

Hydrocracking: See Catalytic hydrocracking.

Hydrocyclones: A hydrocyclone uses centripetal force to sort and separate particles suspended in liquid. Hydrocyclones can be used to sort particles by both mass and size, and can also be used to separate dissimilar fluids.

Hydrodynamic Couplings: A hydrodynamic coupling is a method for transferring power between two rotating shafts. The end of each shaft is enclosed in a sealed housing filled with fluid and the end of each shaft is fitted with a turbine. The ratio of the turbines determines the power transmission characteristics of the coupling. Hydrodynamic couplings have reduced shock loading when compared to other mechanical couplings.

Hydrodynamics: Engineering science pertaining to the energy of liquid flow and pressure.

hydroelectric plant: A plant in which the turbine/generators are driven by the kinetic energy of water. One common type of hydropower plant involves using a dam to store water in a reservoir and when released spins a turbine, creating electricity.

Hydroelectric power: The use of flowing water to produce electrical energy.

Hydrofluorocarbons (HFCs): A group of man-made chemicals composed of one or two carbon atoms and varying numbers of hydrogen and fluorine atoms. Most HFCs have 100-year Global Warming Potentials in the thousands.

Hydroforming: A forming process in which a tube is placed into a forming die. The tube is then formed to the shape of the die through the application of internal water pressure. The hydroforming process allows for severe shape deformation, making it ideal for automotive structural parts such as engine cradles, radiator supports and body rails. Various shaped and sized holes can be punched in the tube almost anywhere during the process.

Hydrogen: An undesirable impurity if present in steel and a cause of fine hairline cracks

especially in alloy steels. Modern vacuum treatment consists of pearlite and cementite.

Hydrogen: The lightest of all gases, occurring chiefly in combination with oxygen in water; exists also in acids, bases, alcohols, petroleum, and other hydrocarbons.

Hydrogen Cooler Pump: A pump that delivers diesel treated cooling water to the hydrogen coolers in #8 and #9 Generators.

Hydrogen Embrittlement: (1) Brittleness of metal, resulting from the occlusion of hydrogen (usually as a by product of pickling or by co deposition in electroplating). (2) A condition of low ductility resulting from hydrogen absorption and internal pressure developed subsequently. Electrolytic copper exhibits similar results when exposed to reducing atmosphere at elevated temperatures.

Hydrogenated amorphous silicon: Amorphous silicon with a small amount of incorporated hydrogen. The hydrogen neutralizes dangling bonds in the amorphous silicon, allowing charge carriers to flow more freely.

Hydrokinetics: Engineering science pertaining to the energy of liquids in motion.

Hydrometer: A float type instrument used to determine the state of charge of a battery by measuring the specific gravity of the battery electrolyte (i.e., the amount of sulfuric acid in the electrolyte).

Hydropneumatics: Pertaining to the combination of hydraulic and pneumatic fluid power.

Hydroponics: Hydroponics is a method for growing plants without soil. Instead, essential nutrients are provided in an enriched solution.

Hydrostatic Couplings: A Hydrostatic Coupling is used for power transmission. Unlike a hydraulic gear motor, they do not have any mechanical couplings, and all power is transferred via change in static pressure inside the system components.

Hydrostatic Level Measurement: Hydrostatic level measurement is a technique that uses a direct measurement of the pressure exerted by a column of fluid to determine the height of fluid in the column.

Hydrostatic Pumps: A Hydrostatic Pump is a hydraulic pump that does not rely on dynamic fluid movement of mechanical coupling to provide a pressure increase. A piston pump is an example of a hydrostatic pump.

Hydrostatic Speed Variators: A Hydrostatic Speed Variator is a hydrostatic transmission that is variable-stroke piston pump connected to a fixed-stroke piston motor. Output RPMs are proportional to pump speed.

Hydrostatic Test: 600 psi feed water test on a down boiler to check for leaks.

Hydrostatics: Engineering science pertaining to the energy of liquids at rest.

Hydrotreating: See Catalytic hydrotreating.

Hydroxyl radical (OH): An important chemical scavenger of many trace gases in the atmosphere that are greenhouse gases. Atmospheric concentrations of OH affect the atmospheric lifetimes of greenhouse gases, their abundance, and, ultimately, the effect they have on climate.

Hygrometer: A Hygrometer is used to measure the relative humidity, a measure of the water vapor pressure in an atmosphere compared to the saturated water vapor pressure of the atmosphere for a specific temperature.

Hygroscopic: Readily absorbing and retaining moisture.

Hypalon®: Dupont trademark for chlorosulfonated polyethylene (CSPE) synthetic rubber.

Hyperbaric Equipment: Hyperbaric equipment refers to equipment that designed to operate at pressures higher than atmospheric pressure.

Hypereutectoid Steel: A steel containing more than the eutectoid percentage of carbon (0.83 wt.%).

Hypoeutectic Alloy: In a eutectoid system, any alloy containing more than the eutectoid concentration of solute.

Hypothetical resources (coal): Undiscovered coal resources in beds that may reasonably be expected to exist in known mining districts under known geologic conditions. In general, hypothetical resources are in broad areas of coal fields where points of observation are absent and evidence is from distant outcrops, drill holes, or wells. Exploration that confirms their existence and better defines their quantity and quality would permit their reclassification as identified resources. Quantitative estimates are based on a broad knowledge of the geologic character of coalbed or region. Measurements of coal thickness are more than 6 miles apart. The assumption of continuity of coalbed is supported only by geologic evidence.

Hysteresis: The difference between the response of a unit or system to an increasing signal and the response to a decreasing signal.

hysteresis: A physical phenomena wherein the path followed during relieving an applied stress lags that during applying the stress, so that on complete removal of the applied stress a strain remains. This particularly occurs in magnetic materials - the lagging of induced magnetism behind the magnetizing force.

Hysteresis: The error defined by the maximum deviation of measured output from a best fit straight line during any one calibration cycle.

hysteresis loss: power loss in the magnetic core due to hysteresis.

Hz (Hertz): A measure of the number of cycles that occur in a specific period of time. Usually the time base is the second, but the time base may be any acceptable measure of time. Synonymous term for cycles per second.

Hz, hertz. : A measure of frequency or bandwidth equal to one cycle per second. Named after experimenter heinrich hertz.

I: Current

I: Interlocked armor of aluminum, bronze or steel.

I Beams: Structural sections on which the flanges are tapered and are typically not as long as the flanges on wide flange beams. The flanges are thicker at the cross sections and thinner at the toes of the flanges. They are produced with depths of 3 24 inches.

I.D. Fan: (I.D. fan) Steam turbine or electric motor driven fan which develops negative draft within the boiler to pull the hot exhaust gases through the boiler.

I.D.M.T.: Inverse Definite Minimum Time.

I/O: Input/Output

I2t: Current Squared times time. This is an electrical quantity that is used to determine energy to a protective device, such as a circuit breaker or fuse.

IACS: International Annealed Copper Standard.

I-band. : The range of frequencies extending from 8.0ghz to 10ghz.

IC engine: [see internal combustion engine]

IC integrated circuit: A type of circuit in which all the components are integrated on a single silicon chip of very small size.

Ic, integrated circuit. : A multi-function semi-conductor device; see table following Isi.

ICCP: Term used for IEC 608706603 protocol.

ICEA: Insulated Cable Engineers Association. ICEA is located at P.O. Box P, South Yarmouth, MA 02664.

Ici: Investment Casting Institute

ICT: Interposing Current Transformer (software implemented).

Id: Inside diameter (of a coil).

ID: Internal Diameter

Id Grinding: Term for internal (dimension) grinding.

Ideal Critical Diameter: The largest diameter of a bar which, upon quenching in an ideal quench, will exhibit 50% martensite at the center of the bar.

ideal current source: A source which maintains the source current at a predefined value independent of the load conditions.

ideal dependent source: An active element in which the source voltage or current is controlled precisely by another voltage or current.

ideal op amp: An operational amplifier with infinite open-loop gain, infinite input impedance and zero output impedance.

Ideal Quench: A quench in which the temperature of an object being quenched instantaneously drops to that of the quench bath and remains constant.

ideal source: An ideal independent source is an active element that provides a specified voltage or current that is completely independent of the remaining circuit elements.

ideal voltage source: A source which maintains the source voltage at a predefined value independent of the load conditions. In other words the terminal voltage is maintained equal to the internal emf.

Ideality Factor: The ideality factor of a diode is a measure of how closely the diode follows the ideal diode equation.

Identification, friend or foe. : Personal identifier (iff-pi) - the discrete iff code assigned to a particular aircraft, ship or other vehicle for identification by electronic means.

Identification. : The indication by an act or means of your own friendly character, or individuality. See also identification, friend or foe (iff).

Identified resources: Coal deposits whose location, rank, quality, and quantity are known from geologic evidence supported by engineering measurements. Included are beds of bituminous coal and anthracite (14 or more inches thick) and beds of subbituminous coal and lignite (30 or more inches thick) that occur at depths to 6,000 feet. The existence and quantity of these beds have been delineated within specified degrees of geologic assurance as measured, indicated, or inferred. Also included are thinner and/or deeper beds that presently are being mined or for which there is evidence that they could be mined commercially.

Idiomorph: A particle of a phase that has a regular external shape.

Idle capacity: The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

Idle character: See null character and syn.

Idle Pump: A pump on an oil system that is not being used. The pump's selection button is in the off mode.

IEA: International Energy Agency

IEC: International Electrotechnical Commission.

IEC: The International Electrotechnical Commission, writes recommended safety and performance standards for electrical products.

IED: Intelligent Electronic Device. Equipment containing a microprocessor and software used to implement one or more functions in relation to an item of electrical equipment. IED is a generic term used to describe any microprocessorbased equipment, apart from

IEE: Institution of Electrical Engineers. Based in Savoy Place, London, UK.

IEE wiring regulations: Regulations framed for wiring installations for the protection of persons, property and livestock from electric shock, fire, burns and injury from mechanical movement of electrically actuated equipment. It is a joint publication of the IEE and the British Standards Institute.

IEEE: Institute of Electrical and Electronics Engineers. Pronounced "eyetripleE", this nonprofit U.S. engineering organization develops, promotes, and reviews standards within the electronics, computer and electric power industries.

IEEE: Institute of Electrical and Electronic Engineers. Based in New York, USA.

IEEE: Institute of Electrical and Electronic Engineers.

IEEE 488: See general purpose interface bus.

Ieee 802.2 : (in lan technology) a data link layer standard used with ieee 802.3, ieee 802.4 and ieee 802.5.

Ieee 802.3. : (in lan technology) a physical layer standard that uses the csma/cd access method on a bus topology lan. Similar to ethernet.

Ieee 802.4 : (in lan technology) a physical layer standard that uses the token-passing access method on a bus topology lan. Nearly identical to map.

Ieee 802.5 : (in lan technology) a physical layer standard that uses the token-passing access method on a ring topology lan.

ieee project 802. : (in lan technology) an ieee team that developed the ieee 802 of lan standards.

Ieee, institute of electrical and electronic engineers. : An international professional society that issues its own standards and is a member of ansi and iso; created ieee project 802.

IESL: Institution of Engineers, Sri Lanka. Based in Wijerama Mawatha, Colombo.

IESNA: Illuminating Engineering Society of North America. Founded in 1906, IESNA is the recognized technical authority on illumination.

IGBT: Insulated Gate Bipolar Transistor

Ignition Cable: A cable designed primarily for automotive ignition system.

Ignition Furnace Fan: A small series of fans used to mix air with gas for the ignition of the furnace.

Ignitors: Devices which employ a high energy electrical spark to ignite the pilot gas flame.

III-V (three-five) materials: Elemental materials that occupy groups III and V of the Periodic Table of the Elements.

ILL (Lighting): Initial Lamp Lumens

Illinois Basin: Consists of Illinois, Indiana, and Western Kentucky.

Illinois Inclusion Count Method: A determination of the index number of cleanliness of steel.

Illite: A mineral, typically $KAl_3Si_3O_{10}(OH)_2$, found in many clays, large working of which are found in Illinois and Michigan.

illumiance: The quantity of light at one point on a surface. It is the quotient of the luminous flux incident on an element of the surface containing the point, and the area of that element.

[Unit lux, lx]

Illuminated: A device that, when connected to an electrical circuit is lighted in the area of the face or handle.

illumination: Emission of optical radiation by the process of thermal radiation.

Imagery. : Collectively, the representations of objects reproduced electronically or by optical means on film, electronic display devices, or other media.

imaginary: Numbers with negative squares. S-1 is the base of such numbers.

imaginary axis: The y-axis in the complex plane.

imaginary operator j: An multiplier or operator with a magnitude of unity and an anticlockwise rotation of 90°. It also has the value S-1 in the complex domain.

IMIS: Integrated Manufacturing Information System.

Imitation.: The introduction into enemy systems of radiations imitating the enemy's own emissions.

Imitative communications deception. : The transmission of messages in the enemies' radio channels by our operators with the intention of deceiving the enemy.

Immediate. : See precedence designations.

Immersed Scanning: In ultrasonics, a planned, systematic movement of the beam relative to the object being inspected, the search unit being coupled to this object through a column of liquid. In most cases the object and the search unit are submerged in water.

Impact: A part formed in a confining die from a metal slug, usually cold, by rapid single stroke application of force through a punch, causing the metal to flow around the punch and/or through an opening in the punch or die.

Impact Energy (Impact Value): The amount of energy required to fracture a material, usually measured by means of an Izod or Charpy test. The type of specimen and testing conditions affect the values and therefore should be specified.

Impact Strength: The resistance to impact loads; usually expressed as the foot pounds of energy absorbed in breaking a standard specimen. See Charpy Impact Test.

Impact Strength: A test designed to ascertain the punishment a cable configuration can absorb, without physical or electrical breakdown, by impacting with a given weight, dropped a given distance, in a controlled environment.

Impact Test: A test for determining the behavior of materials when subjected to high rates of loading under conditions designed to promote fracture, usually in bending, tension or torsion. The quantity measured is the energy absorbed when the specimen is broken by a single blow.

Impedance: The total opposition to electrical flow in an electrical circuit. Input bias current: Current that flows into circuit inputs.

Impedance: The opposition to power flow in an AC circuit. Also, any device that introduces such opposition in the form of resistance, reactance, or both. The impedance of a circuit or device is measured as the ratio of voltage to current, where a sinusoidal voltage and current of the same frequency are used for the measurement; it is measured in ohms.

Impedance: 1) The total opposing force to the flow of current in an ac circuit. 2) The

combination of resistance and reactance affecting the flow of an alternating current generally expressed in ohms.

impedance: The total opposition a circuit offers to the flow of alternating or other current in an electrical circuit. It is the ratio of the voltage to the current. [Unit ohm , W]

Impedance: The total opposition that a circuit offers to the flow of alternating current or any other varying current at a particular frequency.

Impedance: Total opposition to alternating current by an electric circuit, equal to the square root of the sum of the squares of the resistance and reactance of the circuit and usually expressed in ohms

Impedance: The ratio of the effective value of the potential difference between two terminals to the effective value of the current flow produced by that potential difference.

Impedance (Z): Opposition to current flow from the combined effects of resistance and reactance measured in ohms (S).

Impingement: Loss of any constituent from an alloy or from localized areas of an alloy by oxidation, liquidation, volatilization, or changes in the solid state. The term depletion is also used, particularly in referring to the lowering of the concentration of solute in a solid solution, around particles precipitated from solid solution.

Implicit price deflator: The implicit price deflator, published by the U.S. Department of Commerce, Bureau of Economic Analysis, is used to convert nominal figures to real figures.

Implied heat rate: A calculation of the day-ahead electric price divided by the day-ahead natural gas price. Implied heat rate is also known as the 'break-even natural gas market heat rate,' because only a natural gas generator with an operating heat rate (measure of unit efficiency) below the implied heat rate value can make money by burning natural gas to generate power. Natural gas plants with a higher operating heat rate cannot make money at the prevailing electricity and natural gas prices.

Imported crude oil burned as fuel: The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from tarsands, gilsonite, and oil shale.

Imported Refiners' Acquisition Cost (IRAC): The average price for imported oil paid by U.S. refiners.

Imports: Receipts of goods into the 50 States and the District of Columbia from U.S. possessions and territories or from foreign countries.

Impregnation: The treatment of castings with a sealing medium to stop pressure leaks, such as soaking under pressure with or without prior evacuation and either with hot or cold application. Mediums used include silicate of soda, drying oils with or without styrene, plastics, and proprietary compounds.

impregnation: The process of filling the pores of paper and similar material in order to improve its insulation properties.

Impressed Cathodic Protection: When two metals are placed in an environment that is electrolytically conducting, such as soil or salt water, a galvanic couple can be created between the two metals. In this situation, the more active metal corrodes at a faster rate than the other metal, a process called galvanic corrosion. Cathodic protection involves the use of a sacrificial anode - an active metal is placed on the surface to act as the anode in an

electrochemical reaction. As a result, the anode takes on the galvanic corrosion. On large surfaces, it is necessary to link the anode to a DC power supply in order to drive more current through the anode. This process is referred to as Impressed Current Cathodic Protection.

Impression Die Forging: A forging that is formed to the required shape and size by machined impressions in specially prepared dies that exert three dimensional control on the work piece.

Improved recovery: Extraction of crude oil or natural gas by any method other than those that rely primarily on natural reservoir pressure, gas lift, or a system of pumps.

Impulse: Tests to confirm that the insulation level is sufficient to withstand overvoltages, such as those caused by lightning strikes and switching.

impulse: A disturbance of the voltage waveform that is less than about one millisecond. Voltages can rise to hundreds or even thousands of volt in a very short period of time. An impulse may be additive or subtractive.

Impulse: Impulse is the integral of the force over the time interval.

impulse function: A mathematical function with zero magnitude other than at zero time, where it has an infinite magnitude. The magnitude of an impulse function is defined as its time integral.

impulse generator: In most impulse generators, certain capacitors are charged in parallel through high series resistances, and then discharged through a combination of resistors and capacitors, giving rise to the required surge waveform (usually double exponential) across the test device.

impulse response: Behaviour of a circuit when the excitation is the unit impulse function. The excitation function may be a voltage or a current.

Impulse Test: A current surge

Impurities: Elements or compounds whose presence in a material is undesired.

Impurity: An element unintentional allowed in a metal or alloy. Some impurities have little effect on properties; others will grossly damage the alloy.

In: Chemical symbol for Indium

In Service: Term that means in use.

In Sight From: (within sight from, within sight) Where it is specified that one equipment shall be "in sight from", "within sight from" or "within sight", etc. of another equipment, the specified equipment is to be visible and not more than 50' distant from the other

In situ leach mining (ISL): The recovery, by chemical leaching, of the valuable components of a mineral deposit without physical extraction of the mineralized rock from the ground. Also referred to as "solution mining."

In situ leaching (ISL): The recovery by chemical leaching of minerals from porous ore bodies without physical excavation. Also known as solution mining.

Inadvertent power exchange: An unintended power exchange among utilities that is either not previously agreed upon or in an amount different from the amount agreed upon.

Inboard Bearing: Pump bearing that is nearest the driver.

Incandescent: Lampholders of the threaded screw shell types for use with standard sizes of incandescent bulbs, having threaded bases.

incandescent (electric) lamp: Lamp in which light is produced by means of an element heated to incandescence by the passage of an electric current.

Incandescent lamp: A glass enclosure in which light is produced when a tungsten filament is

electrically heated so that it glows. Much of the energy is converted into heat; therefore, this class of lamp is a relatively inefficient source of light. Included in this category are the familiar screw-in light bulbs, as well as somewhat more efficient lamps, such as tungsten halogen lamps, reflector or r-lamps, parabolic aluminized reflector (PAR) lamps, and ellipsoidal reflector(ER) lamps.

Incandescent Lamp: A lamp in which light is produced by a filament heated to incandescence by an electric current.

Incandescent Lamp: it is the light lamp which produce light with a wire filament by passing the current which produces high heat and glow the filament.

Incandescent Lamp: A light bulb which contains a filament in a sealed vacuum. When voltage is applied to the filament, it heats, producing light.

Incandescent light bulbs, including regular or energy-efficient light bulbs: An incandescent bulb is a type of electric light in which light is produced by a filament heated by electric current. The most common example is the type you find in most table and floor lamps. In commercial buildings, incandescent lights are used for display lights in retail stores, hotels and motels. This includes the very small, high-intensity track lights used to display merchandise or provide spot illumination in restaurants. Energy efficient light bulbs, known as "watt-savers," use less energy than a standard incandescent bulb. "Long-life" bulbs, bulbs that last longer than standard incandescent but produce considerably less light, are not considered energy-efficient bulbs. This category also includes halogen lamps. Halogen lamps are a special type of incandescent lamp containing halogen gas to produce a brighter, whiter light than standard incandescent. Halogen lamps come in three styles bulbs, models with reflectors, and infrared models with reflectors. Halogen lamps are especially suited to recessed or "canned fixtures," track lights, and outdoor lights.

incentive : A rebate or some form of payment used to encourage consumers to implement a given demand-side management (DSM) technology.

Incentives Demand-Side Management (DSM) program assistance: This DSM program assistance offers monetary or non-monetary awards to encourage consumers to buy energy-efficient equipment and to participate in programs designed to reduce energy usage. Examples of incentives are zero or low-interest loans, rebates, and direct installation of low cost measures, such as water heater wraps or duct work for distributing the cool air; the units condition air only in the room or areas where they are located.

inch: A measure of length in the imperial system. It is now defined as follows. 1 inch = 25.400 mm

incidence matrix: A connection matrix having elements 1, -1 or 0 dependent on whether a particular connection is present and having the same sign as the reference, has the opposite sign to the reference or not connected at all.

Incident Energy: The amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. Often measured in calories per centimeter squared. (cal/cm²)

Incident Energy: it is the measure of thermal energy at the 18 inches distance from an arc fault.

Incident light: Light that shines onto the face of a solar cell or module.

Incident. : In information operations, an assessed event of attempted entry, unauthorised

entry, or an information attack on an automated cis. It includes unauthorised probing and browsing; disruption or denial of service; altered or destroyed input, processing, storage, or output of information; or changes to cis hardware, firmware, or software characteristics with or without the users' knowledge, instruction, or intent. (dod)

Incidental Light Traffic: Refers to a grade level Reinforced Polymer Concrete or Fiberglass Reinforced Plastic box or Cover load rating of 10,400lbs. This rating is derived from incidental single vehicle tire contact estimated at a maximum of 8000lbs with an impact factor of 30%

Inclusion: Impurities in metal, usually in the form of particles in mechanical mixture.

Inclusion Count: A method of assessing the number and size of non metallic inclusions present in metal.

Inclusion, Stringer: An impurity, metallic or non metallic, which is trapped in the ingot and elongated subsequently in the direction of working. It may be revealed during working or finishing as a narrow streak parallel to the direction of working

Incremental effects: The annual changes in energy use (measured in megawatt hours) and peak load (measured in kilowatts) caused by new participants in existing DSM (Demand-Side Management) programs and all participants in new DSM programs during a given year. Reported Incremental Effects are annualized to indicate the program effects that would have occurred had these participants been initiated into the program on January 1 of the given year. Incremental effects are not simply the Annual Effects of a given year minus the Annual Effects of the prior year, since these net effects would fail to account for program attrition, equipment degradation, building demolition, and participant dropouts. Please note that Incremental Effects are not a monthly disaggregate of the Annual Effects, but are the total year's effects of only the new participants and programs for that year.

Incremental energy costs: The additional cost of producing and/or transmitting electric energy above some previously determined base cost.

Indentation Hardness: The resistance of a material to indentation. This is the usual type of hardness test, in which a pointed or rounded indenter is pressed into a surface under a substantially static load. See Brinell Hardness and Hardness

Independent Chuck: A chuck in which each jaw may be moved independently of the others.

Independent power producer: A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.

independent power producer IPP : Private entrepreneurs who develop, own or operate electric power plants fueled by alternative energy sources such as biomass, cogeneration, small hydro, waste-energy and wind facilities.

Independent sideband transmission (twin sideband) (1).: A method of operation in which each sideband corresponds to one or more modulating signals independent of the modulating signals(s) for the other sideband. Note: in practice, the carrier is either partially or wholly suppressed.

Independent sideband transmission (twin sideband) (2). : A method of operation in which the two sidebands correspond to two independent modulating signals.

Independent System Operator: See California Independent System Operator (CalISO).

Independent system operator (ISO): An independent, federally regulated entity established

to coordinate regional transmission in a non-discriminatory manner and ensure the safety and reliability of the electric system. FERC definition

independent system operator ISO : An entity responsible for the reliable operation of the grid and provision of open transmission access to all market participants on a non-discriminatory basis.

Independent Time Measuring Relay: A measuring relay, the specified time for which can be considered as being independent, within specific limits, of the value of the characteristic quantity.

index: The number indicating the power to which the quantity is raised.

Index Plate: A metal disk or plate punched with many holes arranged in a series of rings. One outside the other each ring containing a different number of holes.

Index Start: Start time for the first coil processed on a new index number.

Indexing: The process of positioning a workpiece for machining it into equal spaces. Dimensions or angles using an index or dividing head.

Indian coal lease: A lease granted to a mining company to produce coal from Indian lands in exchange for royalties and other revenues; obtained by direct negotiation with Indian tribal authorities, but subject to approval and administration by the U.S. Department of the Interior.

Indicated reserves: See Probable energy reserves.

Indicated resources, coal: Coal for which estimates of the rank, quality, and quantity are based partly on sample analyses and measurements and partly on reasonable geologic projections. Indicated resources are computed partly from specified measurements and partly from projection of visible data for a reasonable distance on the basis of geologic evidence. The points of observation are 1/2 to 1-1/2 miles apart. Indicated coal is projected to extend as a 1/2-mile-wide belt that lies more than 1/4 mile from the outcrop, points of observation, or measurement.

indicating instrument: A piece of equipment in which the output is given as the deflection of a needle or the reading of a counter.

Indicator: A mechanical device with points to a scale to provide a visual perspective of the state of a component.

Indicator, collective routing. : A group of letters which identifies all communication stations of a service message relay network, all communications of a service relay network in a specific geographical area, or all minor relay and tributary stations of a major relay station.

indicator, end of message (eom) nnnn. : An indicator used to terminate a transmission in message relay systems.

Indicator, routing (ri). : A group of letters assigned to identify a station within a message relay network to facilitate routing of traffic. It indicates the status of the station and may indicate its geographical area. Routing indicators are composed in accordance with the routing indicator plan described in the acp 121 series.

Indicator, start-of-message (som) zczc. : An indicator employed to activate automatic message switching equipment. It is required on messages passing into or through automatic systems to indicate the start of the message.

Indirect Arc Furnace: An AC (Alternating Current) electric arc furnace in which the metal is not one of the poles.

indirect contact: Contact of persons or livestock with exposed conductive parts which have

become live under fault conditions.

Indirect cost: Costs not directly related to mining or milling operations, such as overhead, insurance, security, office expenses, property taxes, and similar administrative expenses.

Indirect crl (icrl) : A revocation list that at least contains revocation information and certificates issued by authorities other than that which issued this crl.

indirect lighting: Lighting by means of luminaires with a light distribution such that not more than 10 per cent of the emitted luminous flux reaches the working plane direct, assuming that this plane is unbounded.

Indirect mode. : Indirect mode is the operation or use of individual transmitters of a navigational system as radio beacons rather than as part of the system. See direct mode.

Indirect uses (end-use category): The end-use category that handles boiler fuel. Fuel in boilers is transformed into another useful energy source, steam or hot water, which is in turn used in other end uses, such as process or space heating or electricity generation. Manufacturers find measuring quantities of steam as it passes through to various end uses especially difficult because variations in both temperature and pressure affect energy content. Thus, the MECS (an EIA survey) does not present end-use estimates of steam or hot water and shows only the amount of the fuel used in the boiler to produce those secondary energy sources.

Indirect utility cost: A utility cost that may not be meaning fully identified with any particular DSM program category. Indirect costs could be attributable to one of several accounting cost categories (i.e., Administrative, Marketing, Monitoring evaluation, Utility-Earned Incentives, Other). Accounting costs that are known DSM program costs should not be reported under Indirect Utility Cost; those costs should be reported as Direct Utility Costs under the appropriate DSM program category.

indirect utility cost : Any cost that is not identified with a specific DSM category such as Administration, Marketing, etc.

Indium: Chemical symbol In. Grayish white minor metal obtained by treating smelter flue dusts and slags or other residue of base metal concentrates. Capable of marking paper (just as lead does), indium is used in low melting alloys, solders, electrical contact coatings, infrared detectors, nuclear reactor control rods, and various electronic components.

Indium oxide: A wide band gap semiconductor that can be heavily doped with tin to make a highly conductive, transparent thin film. Often used as a front contact or one component of a heterojunction solar cell.

Individual Strand Diameter: The diameter of an individual strand of a stranded wire.

Induced Current: Current in a conductor resulting from a nearby electromagnetic field.

Induced Voltage: A voltage produced in a circuit from a nearby electric field.

Induced Voltage: the potential difference or the voltage created by the magnetic field or a current.

Inductance: 1) The property of a circuit in which a change in current induces an electromotive force. 2) Magnetic component of impedance.

inductance: The property of a circuit or coil that causes an emf to be set up due to a rate of change of current in the circuit or coil. The constant of proportionality is the inductance.

Inductance: the property of a conductor which generate the electromotive force in conductor and nearby conductor due to the change of flow of current passing through it.

Inductance: That property of an electrical circuit by virtue of which a varying current induces an electromotive force in that circuit, or in an adjacent circuit.

Inductance (L): The property of a circuit that opposes a change in current. Also, the property of a circuit to store energy in the form of a magnetic field and release it back into the circuit at a later time.

Induction Furnace: A AC melting furnace which utilizes the heat of electrical induction.

Induction Generator: An induction machine driven above synchronous speed, used to convert mechanical power to electrical power

Induction Heating: A process of heating by electrical induction.

induction heating: A form of heating in which electrically conducting material is heated as a result of the electric currents induced in it by an alternating magnetic field.

induction machine: Induction machines run at a speed slightly different to synchronous speed as the difference speed, known as slip, is required to generate torque. Induction motors run at sub-synchronous speed where as induction generators run at super-synchronous speed.

induction meter: The induction meter depends on the torque produced by the reaction between a flux (whose value depends on the value of the current in one coil) and the eddy currents which are induced in a non-magnetic disc (usually aluminium) by another flux (produced by current in a second coil). Since the action depends on induction, they can be used to measure alternating quantities only. The meter would have a deflection proportional to the product of the two currents.

Induction Motor: An alternating current motor, either single phase or polyphase, comprising independent primary and secondary windings, in which the secondary receives power from the primary by electromagnetic induction.

Inductive Kickback: the interruption in the current flow by the rapid change in the voltage of an inductor.

Inductive Load: Electrical devices made of coiled or wound wire that create a magnetic field when energized. Components such as motors, solenoids and coils are all inductive loads.

Inductive Reactance (X): The opposition that an inductor offers to alternating current. This opposition, in the form of a counter electromotive force (cemf), is expressed in ohms.

Inductive reactance : Electrical current produces heat and/or a magnetic field (such as in the windings of a motor). We refer to the tendency for current flow and changes in flow to be influenced by magnetic fields as inductance. An AC circuit that contains only inductance, capacitance or a combination of the two is defined by the total opposition to current flow expressed in reactance. Inductance only affects current flow when the current is changing. Inductance produces a self-induced voltage (called a counter emf) that opposes changes in current. Obviously, the current changes constantly in an AC circuit. Inductance in an AC circuit, therefore, causes a continual opposition. This opposition to current flow is called inductive reactance.

inductor: A circuit element which is a wire wound into a coil to create a magnetic field.

Inductor Alternator: An alternator in which both field and armature windings are stationary and in which the voltage is produced by varying the flux linking the armature winding.

Inductor : An electrical device designed to provide a specific amount of inductance; measured in henrys (H).

Industrial Air Heaters: Industrial air heaters are heating units designed to deliver high

temperatures used in manufacturing and drying processes. These air heaters are typically sized to deliver millions of BTU per hour with temperatures exceeding 1000 degrees Fahrenheit. Industrial air heaters are usually refractory systems that air fired by gas and/or oil.

Industrial Powder Mixers: Industrial powder mixers are used to combine multiple substances into a well-mixed, homogeneous compound. These mixers may incorporate any combination of rolling, shaking, or active mixing with mechanical parts. Industrial powder mixers are used in many different industries, including the chemical and food products industries.

Industrial production: The Federal Reserve Board calculates this index by compiling indices of physical output from a variety of agencies and trade groups, weighting each index by the Census' value added, and adding it to the cost of materials. When physical measures are not available, the Federal Reserve Board uses the number of production workers or amount of electricity consumed as the basis for the index. To convert industrial production into dollars, multiply by the "real value added" estimate used by the Federal Reserve Board.

Industrial restrictions (coal): Land-use restrictions that constrain, postpone, or prohibit mining in order to meet other industrial needs or goals; for example, resources not mined due to safety concerns or due to industrial or societal priorities, such as to preserve oil or gas wells that penetrate the coal reserves; to protect surface features such as pipelines, power lines, or company facilities; or to preserve public or private assets, such as highways, railroads, parks, or buildings.

Industrial sector: An energy-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity manufacturing (NAICS codes 31-33); agriculture, forestry, fishing and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. Note This sector includes generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities. Various EIA programs differ in sectoral coverage.

Inert Gas: A gas that will not support combustion or sustain any chemical reaction; e.g., argon or helium.

Inert Gas Shielded Arc Welding: Arc welding in an inert gas such as argon or helium.

inertia: Tendency of a body to preserve its state of rest or uniform motion.

Inferred reserve base (coal): the resources in the inferred reliability category that meet the same criteria of bed thickness and depth from surface as the demonstrated reserve base.

Inferred resources: Coal in unexplored extensions of demonstrated resources for which estimates of the quality and size are based on geologic evidence and projection. Quantitative estimates are based largely on broad knowledge of the geologic character of the bed or region and where few measurements of bed thickness are available. The estimates are based primarily on an assumed continuation from demonstrated coal for which there is geologic evidence. The points of observation are 1-1/2 to 6 miles apart. Inferred coal is projected to extend as a 2-1/4-mile wide belt that lies more than 3/4 mile from the outcrop, points of

observation, or measurement.

InfiniBand: the communication that gives 2.5 GB speed to link between the input output devices and processing unit.

infinitesimal: A very small quantity tending to zero, without actually being zero.

infinity: A very large quantity greater than any assignable quantity and tending to the inverse of zero.

Influence Quantity: A quantity which is not the subject of the measurement but which influences the value of the output signal for a constant value of the measurand.

Information assurance (ia). : The application of security measures to protect information processed, stored or transmitted in communication, information and electronic systems by ensuring their availability, integrity, authentication, confidentiality and non-repudiation. This includes providing for restoration of cis by incorporating protection, detection and reaction capabilities. (cceb)

Information bit. : A data bit, as opposed to an overhead bit.

Information environment.: The aggregate of individuals, organisations or systems that collect, process or disseminate information. It also includes the information itself. (au)

Information operations (1). : Actions taken to defend and enhance one's own information and cis and to affect adversary information and cis. (au)

Information operations (2). : Continuous military operations within the military information environment that enable, enhance, and protect the commander's decision-action cycle and mission executive to achieve an information advantage across the full range of military operations. They include interacting within the global information environment and exploiting or attacking an adversary's information and decision system. (ca) information processing system.

Information security, (infosec). : A procedural system implemented to ensure that official information is protected from compromise or misuse. Includes; b.Physical security.c. radiation security.d.Transmission security.e.Crypto security.f.Computer security.

Information superiority. : The degree of supremacy in the information domain that permits the conduct of operations without effective opposition; the capability to collect, process, and disseminate an uninterrupted flow of information, while exploiting or denying an adversary's ability to do the same.

Information system. : Assembly of equipment, methods of procedures and, if necessary, personnel organized so as to accomplish specific information processing requirements.

Infrared Dryer: A core or mold dryer employing infrared lamps.

Infrared radiation: Electromagnetic radiation whose wavelengths lie in the range from 0.75 micrometer to 1000 micrometers.

Infrared Radiation Pyrometer: This instrument which uses the ratio of the radiated energy from a body in two wavelength bands and then is a measure of the body's surface temperature. Temperatures down to 200 C (392 F) may be measured.

infrared radiation : Optical radiation for which the wavelengths are longer than those for visible radiation and shorter than those for radio waves. It corresponds to invisible heat radiation.

Infrared Rays: Pertaining to or designating those rays which lie just beyond the red end of the visible spectrum, such as are emitted by a hot non incandescent body. They are invisible

and nonactinic and are detected by their thermal effect. Their wave lengths are longer than those of visible light and shorter than those of radio waves. Can be applied in the foundry for drying or core baking operations and for heating dies. Infrared radiant heat are synonymous. **infrared** : The form of radiation in the electromagnetic spectrum beyond red light from 760 nanometers to 1000 microns.

Infra-red. : In visual communications. Transmission of signals by light outside the visual spectrum. This method necessitates the use of special equipment and affords greater security than normal visual means.

InGaAs: Indium gallium arsenide

Ingates: The channels through which molten metal enters the mold cavity. See Gate

Ingot: Steel cast in a metal mold ready for rolling or forging. It is distinct from a casting, which is not rolled or forged. Ingots are usually rectangular, called slabs; square, called blooms; polygonal, eight or 12 sided for forging. Squares and polygonal ingots can be fluted or corrugated to increase the surface area and reduce the tendency to crack while cooling.

Ingot Iron: Iron of comparatively high purity produced in open hearth furnace under conditions that keep down the carbon, manganese, and silicon content; e.g., Armco Iron

Ingot Mould: The receptacle into which molten steel is poured to form an ingot. After solidification the steel is suitable for subsequent working, i.e. rolling or forging.

In-house Demand-Side Management (DSM) program sponsor: The building's owner or management encourages consumers in the building to improve energy efficiency, reduce energy costs, change timing or energy usage, or promote the use of a different energy source by sponsoring its own DSM programs.

Initial enrichment: Average enrichment for a fresh fuel assembly as specified and ordered in fuel cycle planning. This average should include axial blankets and axially and radially zoned enrichments.

Initial Lamp Lumens (Lighting): $(AMF \times PS \times RW)/(CU \times LLF)$

Initial operation: First availability of a newly constructed unit to provide power to the grid. For a nuclear unit, this time is when the Full Power Operating License for the unit is received.

Inlet (Male Base): A plug which is intended for flush or surface mounting on an appliance or equipment and which serves to connect utilization equipment to a connector.

Inmetco: Coal based process similar to FASTMET that uses iron oxide fines and pulverized coal to produce a scrap substitute. Mill scale and flue dust, inexpensive byproducts of steelmaking, can be mixed with the iron oxide fines. Inmetco, unlike other direct reduction products, is intended to be hot charged into an EAF, with attendant energy savings. The process includes three steps. First, iron oxide fines, pulverized coal and a binder are formed into pellets. Second, the pellets, two to three layers deep, are heated in a gas fired rotary hearth furnace for 15 20 minutes to produce sponge iron. Subsequently, the iron must be desulfurized. The coal in the pellets provides much of the energy required in the second phase.

Inoculant: Material which when added to molten metal modifies the structure, and thereby changes the physical and mechanical properties to a degree not explained on the basis of the change in composition resulting from its use.

Inoculation: Addition to molten metal of substances designed to form nuclei for crystallization. Also see Inoculant

Inoperable capacity: Generating capacity that is totally or partially out of service at the time of system peak load, either for scheduled outages (see GADS definition of "scheduled outages." These include both maintenance outages and planned outages.) or for reasons such as environmental restrictions; extensive modifications or repair; or capacity specified as being in a mothballed state. This does not include derated portions of generating capacity.

inorganic: Not belonging to the large class of carbon compounds which are termed organic.

Input Impedance: The measured resistance and capacitance between the input terminals of a circuit.

Input Quantity: The quantity, or one of the quantities, which constitute the signals received by the transducer from the measured system.

Input/output (I/O): The transfer of data to and from a computer system involving communications channels, operator interface devices, and/or data acquisition and control interfaces.

Inrush Current: The initial surge of current experienced before the load resistance of impedance increases to its normal operating value.

Insert: A part usually formed from metal, which is placed in a mold and may become an integral part of the casting.

Inserted Tooth Cutter: A milling cutter designed with replaceable cutting tooth inserts to save the expense of a new cutter whenever the teeth become damaged or worn. Generally, they are made 6 inches or more in diameter.

Insertion Force: The effort, usually measured in ounces, required to engage mating components.

insertion loss: This is the loss that occurs as signals pass through a passive device. Insertion loss occurs in all devices which do not amplify the signal. Also called "feed through loss".

Insolation: Sunlight, direct or diffuse; from 'incident solar radiation.' Not to be confused with insulation.

Inspection Lot: See ?lot, inspection?

installation: An electrical installation is a combination of electrical equipment installed to fulfil a specific purpose and having coordinated characteristics.

installed capacity : The total generating units' capacities in a power plant or on a total utility system.

Installed nameplate capacity: See Generator nameplate capacity (installed).

instantaneous frequency : The rate of change of phase angle (in rad/s) or additionally divided by 2π (in Hz).

Instantaneous peak demand: The maximum demand at the instant of greatest load.

Instantaneous Relay: A relay that operates and resets with no intentional time delay.

Instantaneous Relay: The relay system in which no time delay is provided intentionally.

instantaneous value: The value of an alternating current or voltage at any specified instant in a cycle.

Instantaneous water heater: Also called a "tankless" or "point-of-use" water heater. The water is heated at the point of use as it is needed.

Institute of Electrical and Electronic Engineers (IEEE): Professional and standards-writing organization of electrical and computer-related professionals.

Institutional living quarters: Space provided by a business or organization for long-term

housing of individuals whose reason for shared residence is their association with the business or organization. Such quarters commonly have both individual and group living spaces, and the business or organization is responsible for some aspects of resident life beyond the simple provision of living quarters. Examples include prisons; nursing homes and other long-term medical care facilities; military barracks; college dormitories; and convents and monasteries.

instructed person : A person adequately advised or supervised by skilled persons to enable him/her to avoid dangers which electricity may create.

Instrument landing system (ils) . : A system of radio navigation, intended to assist aircraft in landing, which provides lateral and vertical guidance, including indications of distance from the optimum point of landing.

Instrument Transformer: A transformer that is only designed to reduce current or voltage from a primary value to a lower value secondary that can be applied to a meter or instrument, at a proportional safer level.

instrument transformer: A transformer specifically designed to be used with instruments. Their design ensures high accuracy for the quantity to be measured.

Instrument Transformer: The high accuracy class devices used to transform the current or voltages. They are used to operate the instruments. The device connects to high voltage for voltage input and output the voltage to the secondary instrumental circuit.

Instrument Transformer: A transformer (current or potential) suitable for use with measuring instruments; i.e. one in which the conditions of the current, voltage and phase angle in the primary circuit are represented with acceptable accuracy in the secondary circuit.

Instrumentation Cable: Instrumentation cable is a generic terms applied to any conductor wire used to carry signals to and from sensors, measurement devices, systems, and other electrical components. Instrumentation cables can be purchased in standard sizes and voltage/current ratings, though many companies also offer custom design and fabrication of instrumentation cables.

Insulated: Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current.

Insulated Conductor: A conductor to which an insulating material has been applied to withstand a predetermined voltage gradient.

Insulated Gate Bipolar Transistor: A special design of transistor that is suitable for handling high voltages and currents. Often used in static power control equipment such as inverters, or controlled rectifiers, due to the flexibility of control of the output.

Insulated Gate Bipolar Transistor: the three phase variable current output device used to get high accuracy and variation in output power. It is used in stereo and air conditioning control devices.

Insulation: Nonconductive material used to cover wires and components to prevent shock and short circuits.

Insulation: Any material or substance that provides a high resistance to the flow of heat from one surface to another. The different types include blanket or batt, foam, or loose fill, which are used to reduce heat transfer by conduction. Dead air space is an insulating medium in storm windows and storms as it reduces passage of heat through conduction and convection. Reflective materials are used to reduce heat transfer by radiation.

Insulation: 1) A nonconductive material used on a conductor to separate conducting materials in a circuit. 2) The nonconductive material used in the manufacture of insulated cables.

Insulation: Sunlight, direct or diffuse, from incident solar radiation. It is equal to approximately 1000 watts per square meter at high noon. Not to be confused with insulation.

insulation: Suitable non conductive material enclosing, surrounding or supporting a conductor.

Insulation: A material that offers high electric resistance making it suitable for covering components, terminals and wires to prevent the possible future contact of adjacent conductors resulting in a short circuit.

Insulation: Materials that prevent or slow down the movement of heat.

Insulation: The protective materials used to resist the electric current.

Insulation: A non-conductive material usually surrounding or separating two conductive materials. Often called the dielectric in a radio frequency cable.

Insulation (cable): That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

Insulation around heating and/or cooling ducts: Extra insulation around the heating and/or cooling ducts intended to reduce the loss of hot or cold air as it travels to different parts of the residence.

Insulation around hot-water pipes: Wrapping of insulating material around hot-water pipes to reduce the loss of heat through the pipes.

Insulation around water heater: Blanket insulation wrapped around the water heater to reduce loss of heat. To qualify under this definition, this wrapping must be in addition to any insulation provided by the manufacturer.

Insulation Class: The insulation class is a measure of the resistance of the insulation components of a motor to degradation from heat. Four major classifications of insulation are used in motors. They are, in increasing thermal capabilities, A,B,F and H.

insulation co-ordination: Insulation co-ordination now comprises the selection of the electric strength of the various equipment in relation to the voltages which can appear on the system for which the equipment is intended. The overall aim is to reduce to an economically and operationally acceptable level the cost and disturbance caused by insulation failure and resulting system outages.

Insulation Displacement Connection: An electrical connection made by "punching down" a wire in a terminal which cuts through the insulation to make contact with the conductor.

insulation failure: Fault between the phase conductor and non-current carrying metallic parts of an electrical equipment, as a result of which high voltages may appear on the frames of equipment and may be dangerous to a person coming in contact with it.

insulation level: It defines the level of insulation with regard to power frequency and with regard to surges. For equipment rated at less than 300 kV, it is a statement of the Lightning impulse withstand voltage and the short duration power frequency withstand voltage. For equipment rated at greater than 300 kV, it is a statement of the Switching impulse withstand voltage and the power frequency withstand voltage.

Insulation Resistance: That property of an insulating material which resists electrical current flow through the insulating material when a potential difference is applied.

Insulation Resistance: The resistance measured between two insulated points on a transducer

when a specified DC voltage is applied.

Insulation Shield: A layer of semi-conducting material or tape applied directly over the insulation of high voltage cables, usually on cables rated at over 5000 volts. In addition to this layer, some cable constructions include a layer of non-magnetic metal overlapping tape or a number of helically applied small wires.

Insulator: A material that has a high resistance to current flow.

Insulator: A material that is a very poor conductor of electricity. The insulating material is usually a ceramic or fiberglass when used in the transmission line and is designed to support a conductor physically and to separate it electrically from other conductors and supporting material.

Insulator: A device that is used to electrically isolate a conductor or electrical device from ground or a different electrical potential. Electrical insulators are manufactured by Porcelain Products Company and W.H. Salisbury & Company.

insulator: A non-conductor of electricity (or heat)

Insulator: The materials which not allow to pass electric current. They are used as the insulation materials.

Insulator: A non-conducting substance such as porcelain, plastic, glass, rubber, etc.

Intangible drilling and development costs (IDC): Costs incurred in preparing well locations, drilling and deepening wells, and preparing wells for initial production up through the point of installing control valves. None of these functions, because of their nature, have salvage value. Such costs would include labor, transportation, consumable supplies, drilling tool rentals, site clearance, and similar costs.

integer: A whole number.

Integral Belt: In a cable, a layer of insulation or semi-conductive material applied usually by extrusion over two or more insulated, twisted or parallel conductors, to form a round smooth diameter

Integral collector storage (ICS): A solar thermal collector in which incident solar radiation is absorbed directly by the storage medium.

Integral Dose (Volume Dose): A measure of the total energy absorbed by man or any object during exposure to radiation.

Integral Nonlinearity: the maximum deviation between the ideal output of digital-to-analog converter and the actual output level

Integral Nonlinearity (INL): A measure in LSB of the worst-case deviation from the ideal A/D or D/A transfer characteristics of analog I/O circuitry.

integrated circuit: A device that contains its own transistors, resistors, and diodes within itself.

Integrated Circuit (IC): The placement of numerous components and circuits on to a silicon chip.

Integrated communications systems. : Communications systems, which are designed and installed to provide part or all of the communications requirements of two or more member nations.

Integrated demand: The summation of the continuously varying instantaneous demand averaged over a specified interval of time. The information is usually determined by examining a demand meter.

Integrated gasification-combined cycle technology: Coal, water, and oxygen are fed to gasifier, which produces syngas. This medium-Btu gas is cleaned (particulates and sulfur compounds removed) and is fed to a gas turbine. The hot exhaust of the gas turbine and heat recovered from the gasification process are routed through a heat-recovery generator to produce steam, which drives a steam turbine to produce electricity.

Integrated Manufacturing Information System: (IMIS) Computer system used to record production information.

Integrated Mills: These facilities make steel by processing iron ore and other raw materials in blast furnaces. Technically, only the hot end differentiates integrated mills from mini mills. However, the differing technological approaches to molten steel imply different scale efficiencies and, therefore, separate management styles, labor relations and product markets. Nearly all domestic integrated mills specialize in flat rolled steel or plate.

Integrated Plant: A mill that produces steel from basic raw materials from the ore pile to a finished product.

Integrated Steel Producer: A steel company which manufactures solid steel products; starts with raw materials such as iron ore, flux, etc, to make molten iron; converts the molten iron to liquid steel in the steelmaking furnaces and processes liquid to solid steel products. See Minimill Steel Producer.

Integrating ADC : ADC that works by integrating an unknown voltage over time. Time required is compared to the time required to integrate a known reference voltage.

integrating meter: A meter whose output is proportional to the integrated value of a quantity over time. They are usually with rotating discs where the revolutions correspond to the time of integration.

integrator: An op amp whose output is proportional to the integral of the input signal.

Integrity (1). : In messaging, the assurance that a message or other data has not been altered or destroyed in an unauthorised manner while in the messaging system.

Integrity (2). : The accuracy and completeness of information and assets and the authenticity of transactions. See also data integrity and system integrity.

Intel. : A semiconductor (chip) manufacturer, one of the sponsors of ethernet.

Intellectual Property: it refers to creavition of something like inventions and some type of artistic work like logos . Designs and images. Intellectual properties can be protected by patent copyrights and trademarks according to laws.

Intelligence, intelligent. : A term for equipment (or a system or network) which has a built-in processing power (often furnished by a microprocessor) that allows it to perform sophisticated tasks in accordance with its firmware.

Intelligent port selector. : Same as data pabx.

Intensity: The amount of a quantity per unit floor space. This method adjusts either the amount of energy consumed or expenditures spent, for the effects of various building characteristics, such as size of the building, number of workers, or number of operating hours, to facilitate comparisons of energy across time, fuels, and buildings.

Intensity (Lighting): The brightness of light in a given direction. Luminous intensity may be expressed in Candelas (cd) or in Lumens.

Intensity (Radiology): Amount of energy per unit time passing through a unit area perpendicular to the line of propagation at the point in question. Often this term is used

incorrectly in the sense of dose rate.

Intensity per hour: Total consumption of a particular fuel(s) divided by the total floor space of buildings that use the fuel(s) divided by total annual hours of operation.

Inter Chemical Gauge: Wet film thickness can also be measured using an Inter chemical Gauge. A graduated circular cam is rolled against the plate between two parallel rollers. The wet film thickness is then read directly on cam at demarcation of coating wetting the cam.

Interburden: Material of any nature that lies between or separates coal seams. Term is primarily used in surface mining.

Intercast Process: A patented procedure for die casting cast assemble units with moving parts.

Intercept posts.: Term currently used to denote the activities of intercepting, and recording in the field of communications intelligence. Also used to designate the units, stations (centres), and organisations responsible for (conducting) such activities.

Intercept receiver. : A receiver designed to detect and provide visual and/or aural indication of electromagnetic emissions occurring within the particular portion of the electromagnetic spectrum to which it is tuned.

Interception. : The act of searching for and listening to and/or recording communications and/or electronic transmissions for the purpose of obtaining intelligence.

Interchange (electric): Energy transfers that cross Balancing Authority boundaries. NERC definition

Interchange authority (electric): The responsible entity that authorizes implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes. NERC definition

Interchange circuit.: In any interface, a circuit with an associated pin assignment on the interface connector that is assigned a data, timing, or control function.

Interchange energy: Kilowatthours delivered to or received by one electric utility or pooling system from another. Settlement may be payment, returned in kind at a later time, or accumulated as energy balances until the end of the stated period.

Interchange transaction (electric): An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. NERC definition

Interchangeability. : A condition which exists when two or more items possess such functional and physical characteristics as to be equivalent in performance and durability and are capable of being exchanged one for the other without alteration of the items themselves or of adjoining items, except for adjustment and without selection for fit and performance. See also compatibility.

Interchangeable: A device or combination of devices, each individually housed and having common mounting dimensions and intended for field installation on a single or multiple opening mounting strap. Also known as despard.

Intercity bus: A bus designed for high speed, long distance travel; equipped with front doors only, high backed seats, and usually restroom facilities.

Interconnect: A conductor within a module or other means of connection which provides an electrical interconnection between the solar cells. [UL 1703]

Interconnected system: A system consisting of two or more individual power systems

normally operating with connecting tie lines.

Interconnecting Wire: A type of wire for external use in electronic equipments where exposed to physical abuse. Interconnecting wire encompasses both control and power circuits.

Interconnection: Two or more electric systems having a common transmission line that permits a flow of energy between them. The physical connection of the electric power transmission facilities allows for the sale or exchange of energy.

interconnection (electric utility) : The linkage of transmission lines between two utilities, enabling power to be moved in either direction.

interconnection voltage: - The nominal voltage at which the grid interconnection is made. Interconnections allow the utilities to help contain costs while enhancing system reliability.

Intercrystalline: Between crystals, or between grains. Same as intergranular.

Intercrystalline Corrosion: Chromium nickel austenitic stainless steels are prone to this form of corrosion when they are welded and subsequently in contact with certain types of corrosive media. When heated within a temperature range of 450 800oC precipitation of the chromium carbides takes place at the grain boundaries in the area of the weld and these areas not longer have the protection of the chromium on the peripheries of the grains. This type of corrosion is also known as Weld Decay and Intergranular Corrosion. The most common way to avoid the problem is to select a grade of steel that is very low in carbon i.e. 0.03% or less, or one that is stabilized with niobium or titanium.

Intercrystalline Failure: Cracks or fractures that follow along the grain boundaries in the microstructure of metals and alloys.

Interdendritic Attack: A type of electrochemical corrosion that sometimes occurs in as cast alloys or alloys that have had very little working.

Interdepartmental sales: Includes amounts charged by the electric department at tariff or other specified rates for electricity supplied by it to other utility departments.

Interdepartmental service (electric): Interdepartmental service includes amounts charged by the electric department at tariff or other specified rates for electricity supplied by it to other utility departments.

Interest coverage ratio: The number of times that fixed interest charges were earned. It indicates the margin of safety of interest on fixed debt. The times-interest-earned ratio is calculated using net income before and after income taxes; and the credits of interest charged to construction being treated as other income. The interest charges include interest on long-term debt, interest on debt of associated companies, and other interest expenses.

Interface (1) : A shared boundary between two functional units defined by common physical interconnection characteristics, signal characteristics and functional characteristics of the interchange circuits.

Interface (2) : The equipment, which provides this shared boundary.

Interfacial Seal: Sealing of a two-piece, multiple contact connector over the whole area of the interface to provide sealing around each contact.

Interference, accepted. : Interference at a higher level than that defined as permissible interference and which has been agreed upon between two or more administrations without prejudice or other administrations.

Interference, harmful. : Interference which endangers the functioning of a radio navigation

service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radio communication service operating in accordance with the current itu radio regulations.

Interference, permissible. : Observed or predicted interference which complies with quantitative interference and sharing criteria contained in these regulations or in ccir recommendations or in special agreements as provided for in the current itu radio regulations.

interference. : The effect of unwanted energy due to one or a combination of emissions, radiation's, or induction's upon receipt in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

Intergovernmental Panel on Climate Change (IPCC): A panel established jointly in 1988 by the World Meteorological Organization and the United Nations Environment Program to assess the scientific information relating to climate change and to formulate realistic response strategies.

Intergranular Corrosion: Corrosion in a metal taking place preferentially along the grain boundaries.

Interior Region (with Gulf Coast): Consists of Arkansas, Illinois, Indiana, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, Texas, and Western Kentucky.

Interleaving: The placing of a sheet of paper between two adjacent layers of metal to facilitate handling and shearing of rectangular sheets, or to prevent sticking or scratching.

interlock: A device connected in such a way that the motion of one part is held back by another part.

Interlocking directorates: The holding of a significant position in management or a position on the corporate board of a utility while simultaneously holding a comparable position with another utility, or with a firm doing business with the utility.

Intermediate (Lighting): Those areas of a municipality often characterized by moderately heavy nighttime pedestrian activity such as in blocks having libraries, community recreation centers, large apartment buildings, industrial buildings or neighborhood retail stores.

Intermediate Annealing: An annealing treatment given to wrought metals following cold work hardening for the purpose of softening prior to further cold working.

Intermediate Class Arrester: Surge arresters with a high energy handling capability. These are generally voltage classed at 3120kV.

Intermediate Cross-Connect (IC): The cross-connection between the first and second level of backbone cabling.

Intermediate Gear: See Idler

Intermediate grade gasoline: A grade of unleaded gasoline with an octane rating intermediate between "regular" and "premium." Octane boosters are added to gasolines to control engine pre-ignition or "knocking" by slowing combustion rates.

Intermediate lampholder: A lampholder with a threaded screw shell accepting intermediate size incandescent lamps with threaded bases that are approximately 13/32" in diameter. Most often used in decorative lighting such as candle scones, etc.

Intermediate load (electric system): The range from base load to a point between base load and peak. This point may be the midpoint, a percent of the peak load, or the load over a specified time period.

intermediate load (electric systems) : A load in the range from base load to peak load.

Intermediate Temper: A cold rolled hardness range specified with a 15 point Rockwell B spread. See Quarter Hard Temper and Half Hard Temper.

Intermittent electric generator or intermittent resource: An electric generating plant with output controlled by the natural variability of the energy resource rather than dispatched based on system requirements. Intermittent output usually results from the direct, non-stored conversion of naturally occurring energy fluxes such as solar energy, wind energy, or the energy of free-flowing rivers (that is, run-of-river hydroelectricity).

intermittent resources : Resources whose output depends on some other factor that cannot be controlled by the utility, such as wind or sun. Thus, the capacity varies by the hour.

Intermodulation: The amplitude modulation of signals containing two or more frequencies due to nonlinearities in systems.

Internal Cleanliness: Measure of number and types of non-metallic inclusions such as oxides, sulfides or silicates.

Internal Collector Storage (ICS): A solar thermal collector in which incident solar radiation is absorbed by the storage medium.

internal combustion engine IC engine: An engine in which energy supplied by a burning fuel is directly transformed into mechanical energy by the controlled combustion of the fuel in an enclosed cylinder behind a piston. Usually used in petrol and diesel engines.

Internal combustion plant: A plant in which the prime mover is an internal combustion engine. An internal combustion engine has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel or gas-fired engines are the principal types used in electric plants. The plant is usually operated during periods of high demand for electricity.

Internal Diameter: The diameter of some internal part or composite of an object which in this case would pertain to wire, cable, etc.

internal discharge: A discharge occurring within a material.

Internal Friction: Ability of a metal to transform vibratory energy into heat; generally refers to low stress levels of vibration; damping has a broader connotation since it may refer to stresses approaching or exceeding yield strength.

Internal Impedance (Battery): The opposition to the flow of alternating current at a particular frequency in a cell or battery at a specific state of charge and temperature.

Internal Oxidation: Formation of oxides beneath the surface of a metal.

Internal resistance: The resistance within a power source.

Internal Resistance: It is the ability to resist the current and voltage flow by any material. The internal resistance of any system is known as the impedance.

Internal Resistance (Battery): The opposition or resistance to the flow of Direct Electric Current within a cell or battery; The sum of the ionic and electronic resistance of the cell components. Its value may vary with the current, state of charge, temperature, and age. With an extrem

Internal Resistance (Battery): The resistance within a voltage source which causes drop in the voltage source when there is current.

Internal Shrinkage: A void or network of voids within a casting caused by inadequate feeding of that section during solidification.

Internal Stresses (Or Thermal Stresses): Generally stresses which occur during the cooling of a part.

International bunker fuels: See Bunker fuels.

international candle: [An old unit of luminous intensity, now replaced by the candela.] A point source emitting light uniformly in all directions at one-tenth the rate of the Harcourt pentane lamp burning under specific conditions.

International civil aviation organisation (icao). : An international organisation established to provide standardised flight rules and regulations on a worldwide basis.

International System of Units (SI): A universal system of units in which the following six units of measure are considered basic meter, kilogram, second, ampere, Kelvin degree and candela.

International telecommunication union (itu). : The telecommunications agency of the united nations, established to provide standardised communications procedures and practices, including frequency allocation and radio regulations, on a worldwide basis. Itu-t was created on 1 mar 1993, replacing the former international telegraph and telephone consultative committee (ccitt) whose origins go back to 1865. The public and the private sectors cooperate within itu-t for the development of standards that benefit telecommunication users worldwide. See also ccir and ccitt.

Internet Protocol: it is the method of computer communication .every computer have a IP address by which that is identified.

Internet protocol (ip). : Standard that allows dissimilar hosts to connect to each other through the internet.

Internetwork router. : (in lan technology) a device used for communications between sub-networks; only messages for the corrected sub-network are transmitted by this device. Internet routers function at the network layer of the osi model.

Interoperability. : The ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together.

Interphone/intercom. : A telephone apparatus by means of which personnel can talk to each other within an aircraft, tank, ship or activity.

interpolation: A process of filling in intermediate values or terms between known values or terms.

Interrogator. : A pulse transmitter used exclusively for exciting a transponder.

Interrupted Aging: The aging of an alloy at two or more temperatures by steps, and cooling to room temperature after each step. Compare with progressive aging.

Interrupted Quench: Removing the casting from a quenching bath before it has reached the temperature of the bath.

Interrupted Quenching: Quenching in which the metal object being quenched is removed from the quenching medium while the object is at a temperature substantially higher than that of the quenching medium.

Interrupter Rating: The highest current at rated voltage that a device is intended to interrupt under standard test conditions.

Interrupter Switch: A switch equipped with an interrupter for making or breaking connections under load

Interrupter Switch: combination of an air disconnect switch and a circuit interrupter, which has a current interrupting rating, under specific circuit conditions, equal to or less than the continuous rating of the switch at rated voltage.

Interruptible gas: Gas sold to customers with a provision that permits curtailment or cessation of service at the discretion of the distributing company under certain circumstances, as specified in the service contract.

Interruptible load: This Demand-Side Management category represents the consumer load that, in accordance with contractual arrangements, can be interrupted at the time of annual peak load by the action of the consumer at the direct request of the system operator. This type of control usually involves large-volume commercial and industrial consumers. Interruptible Load does not include Direct Load Control.

Interruptible load or interruptible demand (electric): Demand that the end-use customer makes available to its Load-Serving Entity via contract or agreement for curtailment NERC definition

interruptible loads : Loads that can be interrupted in the event of capacity or energy deficiencies on the supplying system.

Interruptible or curtailable rate: A special electricity or natural gas arrangement under which, in return for lower rates, the customer must either reduce energy demand on short notice or allow the electric or natural gas utility to temporarily cut off the energy supply for the utility to maintain service for higher priority users. This interruption or reduction in demand typically occurs during periods of high demand for the energy (summer for electricity and winter for natural gas).

Interruptible power: Power and usually the associated energy made available by one utility to another. This transaction is subject to curtailment or cessation of delivery by the supplier in accordance with a prior agreement with the other party or under specified conditions.

interruptible power : Power whose delivery can be curtailed by the supplier, usually under some sort of agreement by the parties involved.

interruptible rate : Tariff rate for the provision of power at a lower rate to large industrial and commercial consumers who agree to reduce their electricity use in times of peak demand.

Interrupting Medium: The "fluid" used to interrupt the flow of electric current in a switch or circuit breaker. In high power equipment, this may be oil, insulating gas or even no material, as is the case of vacuum interruption which works because in a vacuum there is no mate

Interrupting Medium: the medium used to Interrupt the current flow in a switch or circuit breakers. The fluid may be oil or vaccume.

Interrupting Rating: The rating of a device to interrupt the flow of power or current, generally applied to a circuit breaker or a switch.

Interrupting Rating: Current rating refers to the maximum amount of instantaneous current that can be interrupted safely without explosion or damage to the fuse link carrier, such as the cartridge or tube.

Interrupting Rating or Capacity: Interrupting (breaking or rupturing) capacity is the highest r.m.s. current at normal voltage which a device can interrupt under prescribed conditions.

Interruption: The period from the initiation of an interruption to a customer or other facility to the time the service is restored.

Interruption: the act which tends to oppose any action

Interruption Duration: The loss of electric service to one or more customers or other facilities. It is the result of one or more component outages.

Interruption Duration: the time period to interrupt any action which may be programmable or manual controlled.

Interruption, Momentary: An interruption of a duration limited to the period required to restore service by automatic or supervisory controlled switching operations or by manual switching at locations where operators are immediately available. Such switching operations must be c

Interruption, Sustained: Any interruption not classified as momentary. Any interruption longer than five (5) minutes.

Interstate companies: Natural gas pipeline companies subject to Federal Energy Regulatory Commission (FERC) jurisdiction.

Interstate pipeline: Any person engaged in natural gas transportation subject to the jurisdiction of Federal Energy Regulatory Commission (FERC) under the Natural Gas Act.

Interstate pipeline purchase: Any gas supply contracted from and volumes purchased from other interstate pipelines, overland natural gas import purchases, and LNG, SNG, or coal gas purchases from domestic or foreign sources. Purchases from intrastate pipelines to section 311 (b) of the NGPA of 1978 and from independent producers are not included with interstate pipelines purchase.

Interstice: it may be the space between any object given for any purpose.

Interstice: In cable construction, the space, valley or void left between or around the cabled components.

Interstices: The space between two or more objects, such as the individual strands in a stranded conductor or conductors in a cable.

Interstitial Free Steel: A recently developed sheet steel product with very low carbon levels that is used primarily in automotive deep drawing applications. Interstitial Free Steel's improved ductility (drawing ability) is made possible by vacuum degassing.

Interstitial Solid Solution: A solid solution in which the solute atoms occupy (interstitial) positions between the atoms in the structure of the solvent.

Intracrystalline: Within or across crystals or grains. Same as transcrystalline and transgranular.

Intranet: A restricted access network that works like the internet but is not. Usually owned and managed by a corporation, an Intranet enables a company to share its resources with its employees without confidential information being made available to everyone with

Intranet: the local area network based on Internet protocol which may or may not be connected to internet

Intransit deliveries: Redeliveries to a foreign country of foreign gas received for transportation across U.S. territory, and deliveries of U.S. gas to a foreign country for transportation across its territory and redelivery to the United States.

Intransit receipts: Receipts of foreign gas for transportation across U.S. territory and redelivery to a foreign country, and redeliveries to the United States of U.S. gas transported across foreign territory.

Intrastate companies: Companies not subject to Federal Energy Regulatory Commission

(FERC) jurisdiction.

Intrastate pipeline: Any person engaged in natural gas transportation (not including gathering) that is not subject to the jurisdiction of the Commission under the Natural Gas Act (other than any such pipeline that is not subject to the jurisdiction of the Commission solely by reason of Section 1(c) of the Natural Gas Act).

Intrinsic Error: An error determined when the transducer is under reference conditions.

Intrinsic semiconductor: An undoped semiconductor.

intrinsically safe device: A device, instrument or component that will not produce any spark or thermal effects under any conditions that are normal or abnormal that will ignite a specified gas mixture.

Intrinsically Safe Equipment: Intrinsically safe equipment is equipment that has been designed so that its electronic elements (e.g., circuits, switches, connectors) are incapable of igniting the surrounding atmosphere. Electronics are designed to be low energy and spark free. Intrinsically Safe Equipment also incorporates circuit design which aims to control device level temperature from reaching unsafe levels which could lead to atmosphere ignition.

intrinsically safe : A term used to define a level of safety associated with the electrical controls or circuits.

In-use (vehicles): Implies that a vehicle is

Invar: An alloy having practically no expansion when heated; 36% Ni, 0.5% Mn, 0.2% C, and the balance Fe.

Inverse Chill: The condition in a casting section where the interior is mottled or white, while the other sections are gray iron. Also known as Reverse Chill, Internal Chill and Inverted Chill.

Inverse Segregation: A concentration of certain alloy constituents that have lower melting points in the region corresponding to that first solidifying; caused by interdendritic flow of enriched liquid through channels where the pressure drops with contraction of dendrites. The internal evolution of hydrogen may also give a positive pressure, aiding this flow and causing a liquidated surface as tin sweat. See also Segregation

inverse square law: A law which states that the intensity of an effect due to a source varies inversely as the square of the distance between.

Inverse Time Delay Relay: A dependent time delay relay having an operating time which is an inverse function of the electrical characteristic quantity.

Inverse Time Delay Relay: time delay in the relay is inversely proportional to the magnitude of actuating quantity

Inverter: A logic device (NOT function) whose output is always opposite the input. Also refers to a device that converts dc to ac.

Inverter: A device that converts DC electricity into single or multiphase AC electricity.

inverter: An electric or electronic device for producing alternating current from direct current.

Inverter: It is the device which converts the direct current into alternating current. The inverter unit can store the electrical energy in to power batteries and can also change the voltage output into required voltage.

Inverters: Devices that convert DC electricity into AC electricity (single or multiphase),

either for stand-alone systems (not connected to the grid) or for utility-interactive systems.

inverting amplifier: Reverses the polarity of the input signal while amplifying it.

Investing: The process of pouring the investment slurry into the flask surrounding the pattern to form the mold.

Investment Casting: Casting produced in a mold obtained by investing an expendable pattern with a refractory to produce a shell. The expendable pattern may consist of wax, plastic, or other material and is removed prior to filling the mold with liquid metal.

Investment of municipality: The investment of the municipality in its utility department, when such investment is not subject to cash settlement on demand or at a fixed future time. Include the cost of debt-free utility plant constructed or acquired by the municipality and made available for the use of the utility department, cash transferred to the utility department for working capital, and other expenditures of an investment nature.

Investment Precoat: An extremely fine investment coating applied as a thin slurry directly to the surface of the pattern to reproduce maximum surface smoothness. The coating is surrounded by a coarser, cheaper, and permeable investment to form the mold. See Dip Coat

Investments and advances to unconsolidated affiliates: The balance sheet account representing the cost of investments and advances to unconsolidated affiliates. Generally, affiliates that are less than 50-percent owned by a company may not be consolidated into the company's financial statements.

Investor Owned Utility (IOU): A utility company whose assets are owned by investors and whose stock is publicly traded.

Investor-owned utility (IOU): A privately-owned electric utility whose stock is publicly traded. It is rate regulated and authorized to achieve an allowed rate of return.

Inwall Brick: Refractory lining of the inwall section of blast furnace or cupola.

Ion: Part of a molecule or group of atoms, positively or negatively charged, that transports electricity.

Ion: An atom that is electrically-charged because of loss or gain of electrons.

Ion exchange: Reversible exchange of ions adsorbed on a mineral or synthetic polymer surface with ions in solution in contact with the surface. A chemical process used for recovery of uranium from solution by the interchange of ions between a solution and a solid, commonly a resin.

Ion motor. : A propulsion system applicable to satellites in which charged particles are accelerated electrically, providing thrust.

ionisation: Ionisation is the process by which an electron is removed or added to an atom, leaving the atom with a net negative charge (negative ion) or a net positive charge (positive ion). A process of formation of ions.

Ionization: The act of splitting into or producing ions.

Ionization Chamber: An instrument designed to measure quantity of ionizing radiation in terms of the charge of electricity associated with ions produced within a defined volume.

Ionizing radiation: Radiation (including alpha particles) capable of breaking chemical bonds, thus causing ionization of the matter through which it passes and damage to living tissue.

Ionosphere. : The part of the earth's outer atmosphere where free electrons arising from ionization are normally present in quantities sufficient to modify the propagation

characteristics of radio waves traversing it. Note: for purposes of reference, the ionosphere is divided into three regions, designated by letters d, e and f whose boundaries are approximately spherical and concentric with the surface of the earth.

Ionospheric prediction (1). : A forecast, often in chart form, of ionospheric conditions relevant to communication service.

Ionospheric prediction (2). : The forecasting of ionospheric conditions and the preparation of radio propagation data derived there from.

IOU: See Investor-Owned Utility

IOU: See Investor Owned Utility

IP Address: Internet Protocol address. This address is a 32 bit, unique string of numbers that identifies a computer, a printer, or another device on the internet. The IP address consists of a quartet of numbers separated by periods.

IP Address: Internet Protocol address. It is the numerical identify of every computer. By this IP address it can be identified for data sharing.

IP Rating: Rating system established by IEC Publications 144 and 529 which defines the degree of protection provided by electrical enclosures with respect to person, other electrical equipment and the ingress of water.

IPE: Irradiated polyethylene tape.

Ipm: An identifiable piece of steel; can be a slab, coil, or a bundle of sheets, or several slit mulds banded together.

IPM: Inches per minute

Ipm Number: (In Process Material) A seven character number, consisting of the unit ID and sequential production number, used to track production history of a coil. The letter and first digit are used to identify the production unit and the last five digits are the sequential production identifying number.

IPP: See Independent Power Producer

IR: Insulation Resistance

Iridium: A noble metal of the platinum group. Usually extensively as a radiation source. For radiography of thin walled castings.

IRIG-B: An international standard for time synchronization.

Iris Valve: Iris valves are mechanical devices used to restrict or shut-off the flow of a substance and are usually found in dry bulk handling systems. Iris valves use either a series of overlapping leaves or flexible sleeve of material. As a control handle is rotated around the outside of the valve, the leaves or material twist on top of each other until the valve is closed.

Iron: (Chemical symbol Fe.) Element No. 26 of the periodic system; Atomic weight 55.85. A magnetic silver white metal of high tensile strength, ductile and malleable. Melting point of pure iron about 2795 (degrees) F. Chemically iron is chiefly base forming. The principal forms of commercial iron are steel, cast iron and wrought iron.

iron - inter-range orbit number. : Allocated to each object launched by the us space and missile agencies.

Iron and steel industry: Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills Establishments primarily engaged in manufacturing hot metal, pig iron, and silvery pig iron from iron ore and iron and steel scrap; converting pig iron, scrap iron, and scrap steel into steel; and in hot-rolling iron and steel into basic shapes, such as plates, sheets, strips,

rods, bars, and tubing.

Iron Carbide: One of several substitutes for high quality, low residual scrap for use in electric furnace steelmaking. Iron carbide producers use natural gas to reduce iron ore to iron carbide.

Iron Carbon (Graphite) Diagram: A diagram representing stable equilibrium conditions between iron and graphite (pure carbon) phase over the entire range of iron and steel.

Iron Iron Carbide Diagram: A phase diagram representing metastable equilibrium conditions between Fe and Fe₃C over the entire range of carbon steels and cast irons.

Iron Ore: Mineral containing enough iron to be a commercially viable source of the element for use in steelmaking. Except for fragments of meteorites found on Earth, iron is not a free element; instead, it is trapped in the earth's crust in its oxidized form.

Iron Oxide: This material as prepared for foundry use generally contains about 85% ferric oxide and is produced by pulverizing a high grade of pure iron ore. It can be added to core sand mixes to assist in keeping the core from cracking before the metal solidifies during the casting operation and also helps to resist metal penetration during this period. Added to molding sand mixtures for control of finning and veining. Also may reduce carbon pick up.

Iron Sand: See Iserine

Iron Zinc Alloy Coating: See Galvanized.

Iron, Pearlitic Malleable: A malleable iron having a more or less pearlitic matrix.

Ironing: Thinning the walls of deep drawn articles by reducing the clearance between punch and die.

Irradiate: Material subjected to ionizing radiation. Irradiated reactor fuel and components have been subjected to neutron irradiation and hence become radioactive themselves.

Irradiated nuclear fuel: Nuclear fuel that has been exposed to radiation in the reactor core at any power level.

irradiation: Exposure to radiation of any kind.

Irradiation: The exposure of a material to high energy emissions. In insulations for the purpose of favorably altering the molecular structure.

irreversible process: A process that is not fully reversible.

Isdn, integrated services digital network. : A ccitt standard, currently under development, that will cover a wide range of data communications issues but primarily the total integration of voice and data. Already having major effects on exchange and multiplexor design.

Iserine: A black sand which consists mainly of magnetic iron ore but also contains a considerable amount of titanium.

islanded operation: - The situation that arises when a part of the electrical system is disconnected from the main grid and is energised by one or more generators connected to it.

islanding: The process whereby a power system is separated into two or more parts, with generators supplying loads connected to some of the separated systems.

ISM Band: The 2.4GHz frequency spectrum. ISM is actually synonymous with 2.4GHz, however it stands for Industrial, Scientific and Medical.

ISM Band: Industrial, scientific and medical (ISM) radio bands. This is the internationally reserved bands for the communication of industrial, scientific and medical purpose. They cannot be used by the generally for telecommunication purpose.

ISO: See Independent System Operator

ISO: Independent System Operator

Iso, international standards organisation. : A worldwide federation of national standards bodies from 100 countries, one from each country. Note: a nongovernmental organization, established to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity. Membership includes standards organisations from participating nations (ansi is the usa representative).

Isobutane: 410A branch-chain saturated (paraffinic) hydrocarbon extracted from both natural gas and refinery gas streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 11 degrees Fahrenheit.

Isobutylene : 48A branch-chain olefinic hydrocarbon recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Isobutylene is used in the production of gasoline and various petrochemical products.

Isochrone determination. : Radiolocation in which a position line is determined by the difference in the transmit times of signals along two paths.

Isochrone. : A line (on a map or chart) joining points associated with a constant time difference in reception of radio signals.

Isochronous. : A form of data transmission in which individual characters are only separated by a whole number of bit-length intervals. Contrast with asynchronous transmission in which the characters may be separated by random length intervals.

Isocure: Proprietary name for a binder system developed for use in Ashland (Cold Box) Process, itself a proprietary process.

Isocyanate Acid: Isomeric cyanic acid (HNCO).

Isohexane : 614A saturated branch-chain hydrocarbon. It is a colorless liquid that boils at a temperature of 156.2 degrees Fahrenheit.

isokeraunic level : Contours of constant keraunic level or thunder days.

Isolate: (Isolation) To remove a boiler, or any particular part or system of a boiler, from service by closing the manual valves.

Isolated Ground: A grounding type device in which the equipment ground contact and terminal are electrically isolated from the receptacle mounting means.

Isolation: The process of de energizing, line blanking, bleeding, and locking, tagging and trying to secure a system or piece of equipment for work.

Isolation: A metal link used in series with a fusing device that melts and prevents refusing/reenergization of a transformer.

isolation: The degree to which a device can separate the electrical environment of its input from its output, while allowing the desired transmission to pass across the separation.

Isolation: measure of how well two ports are disconnected in devices such as directional couplers and circulators

Isolation Link: 1) A nonconductive material used to separate conducting materials in a circuit. 2) The nonconductive material used in the manufacture of insulated cables.

Isolation Link: Isolation links provide extra protection during refusing and switching operations

isolation transformer: A transformer with physically separate primary and secondary

windings. An isolation transformer does not transfer unwanted noise and transients from the input circuit to the output windings.

isolator : A mechanical switching device which, in the open position, complies with the requirements specified for isolation. An isolator is otherwise known as a disconnecter.

Isomerization: A refining process that alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert normal butane into isobutane (C₄), an alkylation process feedstock, and normal pentane and hexane into isopentane (C₅) and isohexane (C₆), high-octane gasoline components.

Isomorphous: Phases with crystal structures of the same type.

Isopach: A line on a map drawn through points of equal thickness of a designated unit (such as a coal bed).

Isopentane: A saturated branched-chain hydrocarbon (C₅H₁₂) obtained by fractionation of natural gasoline or isomerization of normal pentane.

Isothermal Annealing: A process in which a ferrous alloy is heated to produce a structure partly or wholly austenitic, and is then cooled to and held at a temperature that causes transformation of the austenite to a relatively soft ferrite carbide aggregate.

Isothermal Transformation: 1) The process of transforming Austenite in a ferrous alloy to Ferrite or a ferrite carbide aggregate at any constant temperature within the transformation range, 2) transformation of one phase in an alloy system to another phase at any constant temperature.

Isothermal Transformation (It) Diagram: A diagram that shows the isothermal time required for transformation of austenite to commence and to finish as a function of temperature. Same as time temperature transformation (TTT) diagram or S curve.

isothermal : A process that is kept at a constant temperature.

Isothermal Transformation Curve: Also known as the Time Temperature Transformation Curve. If a small piece of steel is heated sufficiently slowly for it to become austenitic and then plunged into a salt bath and held at a constant temperature below the upper critical point for a definite time followed by rapid quenching, it is possible by examination to determine the extent to which the transformation of the austenite has occurred. By taking a number of specimens of the same steel and treating them in the same way, but varying the holding temperature and time behavior of the steel with time and temperature can be studied. The information obtained can be plotted as time temperature transformation curves which is useful in heat treatment practice, particularly for martempering and austempering.

Isotope: One of several different nuclides having the same number of protons in their nuclei, and hence having the same atomic number, but differing in the number of neutrons and therefore in the mass number.

Isotope: An atomic form of an element having a particular number of neutrons. Different isotopes of an element have the same number of protons but different numbers of neutrons and hence different atomic mass, e.g., U-235, U-238. Some isotopes are unstable and decay to form isotopes of other elements.

Isotopes: Forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope. Many isotopes have been produced in reactors and scientific laboratories.

isotropic: Substances exhibiting uniform properties throughout, in all directions.

Isotropic Antenna: A theoretical, ideal antenna having a signal range of 360 degrees. It is used as a baseline for measuring a real antenna's strength signal, in dBi, where i represents Isotropic Antenna.

Isotropic Antenna: An isotropic antenna is an ideal antenna that radiates its power uniformly in all directions.

ISPRA guidelines: Guidelines for the assessment of Photovoltaic Plants, published by the Joint Research Centre of the Commission of the European Communities, Ispra, Italy.

Isu, integrated service unit. : A single device that combines the functions of both a csu and a dsu.

IT system: , a system having no direct connection between live parts and Earth, the exposed conductive parts of the electrical installation being earthed.

it, information technology. : A catch-all term used to describe the techniques used for the automation of information handling and retrieval, including computing, telecommunications and office systems.

Iti, interactive terminal interface. : (in packet-switched networks) a pad that supports network access by asynchronous terminals.

I-type semiconductor: Semiconductor material that is left intrinsic, or undoped so that the concentration of charge carriers is characteristic of the material itself rather than of added impurities.

I-V curve: A graphical presentation of the current versus the voltage from a photovoltaic device as the load is increased from the short circuit (no load) condition to the open circuit (maximum voltage) condition. The shape of the curve characterized cell performance.

I-V data: The relationship between current and voltage of a photovoltaic device in the power-producing quadrant, as a set of ordered pairs of current and voltage readings in a table, or as a curve plotted in a suitable coordinate system (e.g., Cartesian). [ASTM E 1036]

Izod Impact Test: A test specimen, usually of square cross section is notched and held between a pair of jaws, to be broken by a swinging or falling weight. When the pendulum of the Izod testing machine is released it swings with a downward movement and when it reaches the vertical, the hammer makes contact with the specimen which is broken by the force of the blow. The hammer continues its upward motion by the energy absorbed in breaking the test piece reduces its momentum. A graduated scale enables a reading to be taken of the energy used to fracture the test piece. To obtain a representative result the average of three tests is used and to ensure that the results conform to those of the steel specification the test specimens should meet the standard dimensions laid down in BS 131.

J: Asphalted jute, non-metallic armor

J :

J Integral: A mathematical expression used to characterize the fracture toughness of a material having appreciable plasticity prior to fracture. The J integral eliminates the need to describe the behavior of the material near the crack tip. Units are MN/m or in in lb/in².

Jabber, jabbering. : (in lan technology) continuously sending random data (garbage); normally used to describe the action of a station (whose circuitry or logic has failed) that locks up the network with its incessant transmission.

Jack: A device into which a plug is inserted in order to make electrical contact in a communication circuit.

Jack Arch: A spring arch, flat or horizontal on the underside.

Jacket: The enclosure on a water heater, furnace, or boiler.

Jacket: A covering over insulated conductors for the purpose of electrical, chemical, and physical protection.

Jacket: Outermost layer of insulating material of a cable or wire.

Jacket: A material covering over a wire insulation or an assembly of components. An overall jacket on a complex cable grouping is also often referred to as a sheath.

Jacobs Chuck: Common term for the drill chuck used in either the headstock spindle or in the tailstock for holding straight-shank drills, taps, reamers or small diameter workpieces.

Jamb: Usually an upright structural member forming the side of an opening in a refractory or furnace wall.

Jamb Brick: A brick modified so one corner is rounded.

Jammer area coverage. : The ground or sea area over which an electronic jammer is capable of producing a jamming signal of effective strength.

Jammer steering. : Any action taken to ensure the alignment of jamming transmissions accurately and promptly onto selected enemy signals.

Jammer. : A transmitter designed specifically to prevent or reduce the enemy's effective use of the electromagnetic spectrum.

Jamming: When the combined diameters of three cables roughly equal the interior diameter of the conduit, the cables can line up linearly as they are pulled around the bend. The cables then wedge against the conduit wall as they are forced towards the inside of the

Jamming. : The deliberate radiation of own, re-radiation or reflection of enemy's electromagnetic energy with the object to prevent or reduce the use of electromagnetic devices or systems by the enemy.

jamming-to-signal. (j/s) ratio. : The ratio, at a designated point in space or in the circuits of an electronic system, of jamming power to a signal power.

Jar Ramming: Packing sand in a mold by raising and dropping on a table the sand, pattern, and flask. Jolt squeezers, jarring machines, and jolt rammers are machines using this principle.

Jarno: A standard taper having 0.600 inch taper per foot used in some machine tools.

Jersey Fireclay Brick: Highly siliceous clay brick, semisilica brick.

Jet Cooler: Device that controls the cooling of the strip before it enters the hot dip galvanize pot.

Jet fuel: A refined petroleum product used in jet aircraft engines. It includes kerosene-type jet fuel and naphtha-type jet fuel.

Jet Scrubber: IN air pollution control, a high velocity water jet directed into the throat of a venturi section of a cupola to separate out particulates.

Jet Tapping: A method of tapping a melting furnace by firing a small explosive charge instead of using an oxygen lance. The tapper consists of an explosive charge enclosed in a plastic case surrounded by a hollow bullet shaped body.

Jib: Projecting part of crane from which lifting chain or gear is suspended.

Jig Saw Steel: Hardened, tempered and bright polished with round edges. Carbon content .85. Ranges of sizes .039 to 393 in width and .016 to .039 in thickness.

JIT: Just in Time

Jitter. : Short term variations of the significant instants of a digital signal from their ideal positions in time.

J-K flip flop: A type of flip-flop that can operate in the 'no change', 'set', 'reset' and 'toggle' modes.

Jobbing Foundry: A foundry engaged in the manufacture of numerous types of castings.

Jog: Act of moving the strip forward or backward. This can be done with the pinch rolls or the reel.

Johansson Blocks (Jo Blocks): Common term for the precision gage blocks used and accepted as dimensional standards by machinists, toolmaker and inspectors.

Johnny Ball: Slang for "Guy Strain Insulator".

Join: IMIS action type indicating that parts of two or more coils have been combined to produce a single unit.

Join Count: Field incremented by one each time coil contains more than 1 Consumed IPM number 2 coils welded together to make jumbo.

Joint Implementation (JI): Agreements made between two or more nations under the auspices of the Framework Convention on Climate Change (FCCC) whereby a developed country can receive "emissions reduction units" when it helps to finance projects that reduce net emissions in another developed country (including countries with economies in transition).

Joint operations centre (joc). : A jointly manned facility of a joint force commander's headquarters established for planning, monitoring and guiding the execution of the commander's decisions.

Joint Time-Frequency Analysis (JTFA): Technique for special analysis of rapidly changing waveforms.

Joint Welding: Production welding used to weld cast components together to obtain an integral unit.

Joint-use facility: A multiple-purpose hydroelectric plant. An example is a dam that stores water for both flood control and power production.

Jolt Ramming: See Jar Ramming

Jolt Squeezer Machine: A combination machine that employs a jolt action followed by a squeezing action to compact the sand around the pattern.

Jominy: A hardenability test for steel to determine the depth of hardening obtainable by a specified heat treatment.

Jots, joint operational tactical system. : Designed to support maritime command, control and intelligence requirements. Can read and display any oth gold formatted messages.

Joule: The basic unit of electrical, mechanical, and thermal energy. As a unit of electrical energy it is equal to the energy carried by 1 coulomb of charge being propelled by an electromotive force of 1 volt. Named for James Joule, the British physicist who established the mechanical theory of heat and discovered the first law of thermodynamics.

Joule: 1) Work done by the force of one neutron when its point of application moves through the distance of one meter in the direction of the force. 2) One wattsecond.

Joule: The work required to move an electric charge of one coulomb through an electrical potential difference of one volt, or one "coulomb volt" (C·V). This relationship can be used to define the volt.

Joule: The unit of work.

Joule (J): The meter-kilogram-second unit of work or energy, equal to the work done by a force of one newton when its point of application moves through a distance of one meter in the direction of the force; equivalent to 10^7 ergs and one watt-second.

joule (J) : SI unit of work or energy. One joule is defined to be the work done by a force of one newton acting to move an object through a distance of one meter in the direction in which the force is applied.

Joule Rating: The short duration peak energy rating of a surge suppression device. The higher the joule rating the longer the expected life of the device.

joule's equivalent: Mechanical equivalent of heat. 4.185 J/cal

Joule's Law: The rate of heat production by a steady current in any part of an electrical circuit that is proportional to the resistance and to the square of the current, or, the internal energy of an ideal gas depends only on its temperature.

Jp: 1) Fully alloyed galvanized product. 2) On Galvanize the aluminum percentage is reduced from the pot on the Galvanize lines; primarily zinc left; produces a flat, dull coating on the steel (Jet Process).

Jp Bazooka: Device that introduces a flame to the strip as it exits the pot (used to produce JP product).

Jtids, joint tactical information distribution system. : An advanced radio system which provides information distribution position location and identification capabilities in an integrated form for application to military tactical operations.

Julian filing time (jft). : A 7 figure number comprising of the julian date and the time (z) that the subject message was accepted for transmission by the commcen.

Jumbo Coil: A single coil produced by welding two or more coils.

Jumper: An electrical connection between two points.

Jumper: the short length conductor used to connect or complete the circuit on PCB (printed circuit boards)

Jumper Wire: A short length of twisted pair cable used to route a circuit between two cross-connect termination points.

Jumping Coil In: Moving a coil ahead of other coils in a line up.

Junction: A region of transition between semiconductor layers, such as a p/n junction, which goes from a region that has a high concentration of acceptors (p-type) to one that has a high concentration of donors (n-type).

Junction: A region of transition between semiconductor layers, such as a p/n junction, which goes from a region that has a high concentration of acceptors (p-type) to one that has a high concentration of donors (n-type).

junction box: An enclosure where conductors or wires are spliced or terminated.

Junction box: A Photovoltaic generator junction box is an enclosure on the module where Photovoltaic strings are electrically connected and where protection devices can be located, if necessary.

Junction Box: A box used in an electrical circuit to enclose and permit access to electrical connections.

junction diode: A diode consisting of a pN junction and suitable connecting leads.

Junction diode: A semiconductor device with a junction and a built-in potential that passes

current better in one direction than the other. All solar cells are junction diodes.

Junction Diode Sensor: The sensor based on PN junction used to determine die temperature.

Junction Field Effect Transistor (JFET): A transistor type made by diffusing a gate region into a channel region. Voltage applied to the gate controls current in the channel by either depleting or enhancing the channel.

Junction Header: First steam distribution point after exiting the boiler drum.

Junction stages. : A junction stage represents a characteristic point in the electrical layout of a system, accessible from the point of view of interconnection to a similar point in another system: examples:a.)Stage of voice frequency channels.b.Intermediate frequency stage.c.Stage of groups of channels (primary group or secondary group, etc).d.)Radio frequency stage.

Junction, 200 Amp: A "200 Amp Junction" is a molded synthetic and composite device used to connect two or more 200 Amp rated cables operating at Medium Voltage (435KV nominal). Connections to the cables are made via "200 Amp Elbows".

Junction, 600 Amp: A "600 Amp Junction" is a molded synthetic and composite device used to connect two or more 600 or 900 Amp rated cables operating at Medium Voltage (435KV nominal). Connections to the cables are made via "TBodies".

Junk Batteries: This term usually refers to spent automotive lead acid batteries, which are purchased by secondary lead smelters. The standard form of shipment is in the whole and undrained state to meet environmental regulations. Lead metal constitutes around half the weight of a junk battery. Other parts, including the plastic case, also are recycled.

Jurisdictional utilities: Utilities regulated by public laws.

justifiable digit time slot. : A digit time slot that may contain either an information concerning the status of the justifiable digit time slots.

Justification. : A process of changing the rate of a digital signal in a controlled manner so that it can accord with a rate different from its own inherent rate, usually without loss of information.

Justifying digit. : A digit inserted in a digit time slot when that time slot does not contain an information digit.

K: Constant used to denote insulation resistance.

K :

K Factor: Tensile strength in pounds per square inch divided by the Brinell Hardness number.

K Plate: Tin plate with superior corrosion resistance to mild acid food products; must meet four (4) special property tests 1. Pickle lags 10 or less. 2. in crystal size ASTM 9 or larger. 3. ISV (iron solution value) 20 micro amps Fe or less. 4. ATC (Alloy tin couple American Can test) or AMP (Aerated Media Polarization test) Avg. 0.050 micro amps/sq. cm. Or less 95% 0.085 or less. No test over 0.120.

Kahlbaum Iron: An iron of more than 99.975% purity, produced in Germany.

Kaldo Process: A method of producing steel from molten iron, using an inclined rotating converter and a water cooled oxygen lance inserted through the converter mouth. Originating in Sweden, this process is no longer in use in the UK

Kalling Dommarfvet Process: A desulfurizing process using powdered burnt iron.

Kanal: the unit used in india to measure the area.

Kaolin: The purest form of China clay consisting of silicate of aluminum.

Kaplan turbine: A type of turbine that has two blades whose pitch is adjustable. The turbine may have gates to control the angle of the fluid flow into the blades.

Kappa Carbide: A carbide of iron (Fe₂₃, C₆) in which all or part of the iron may be replaced by chromium, molybdenum, and/or tungsten.

karnaugh map: An arrangement of cells representing the combinations of variables in a Boolean expression and used for a systematic simplification of the expression.

Kayser Hardness Test: A method for determining the true hardness of metals at high temperatures.

kb: Kilobyte. The unit to measure the digital memory. One kb is equal to 1000 bytes.

K-Bus (Courier): Term used for the courier protocol on KBus interface for KRelay range manufactured by Alstom.

Kc (Plane Stress Fracture Toughness): The value of stress intensity at which crack propagation becomes rapid in sections thinner than those in which plane strain conditions prevail. Units are MPa/m or ksi/in.

KCM: 1000 circular mils

kcMil: One thousand circular mils

kcMil: Circular mil. Unit to measure the cross sectional area like wire.

kelvin (K): The kelvin is unit of thermodynamic temperature. It is a fundamental unit. It is defined as the fraction 1/273.16 of the thermodynamic temperature of the triple point of water [1967]

kelvin double bridge: It is a double bridge arrangement, which is an extension of the Wheatstone bridge, for the precise measurement of low resistance. The errors due to contact and lead resistances are eliminated by the additional bridge incorporated.

Kelvin Temperature Scale: One in which the unit of measurement equals that of the centigrade degree and according to which absolute zero is 0 degrees, equivalent to 273.16 C.

Kentucky, Eastern: . All mines in the following counties in Eastern Kentucky Bell, Boyd, Breathitt, Carter, Clay, Clinton, Elliot, Estill, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Magoffin, Martin, McCreary, Menifee, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Rowan, Wayne, Whitley, and Wolfe.

Kentucky, Western: . All mines in the following counties in Western Kentucky Breckinridge, Butler, Caldwell, Christian, Crittenden, Daviess, Edmonson, Grayson, Hancock, Hart, Henderson, Hopkins, Logan, McLean, Muhlenberg, Ohio, Todd, Union, Warren, and Webster.

keraunic level : Number of days in the year in which thunder is heard.

Kerf: The width of a cut.

Kerosene: A light petroleum distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. Also see Kerosene-type jet fuel.

Kerosene-type jet fuel: A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum

boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbo jet and turbo prop aircraft engines.

Ketone-alcohol (cyclohexanol): An oily, colorless, hygroscopic liquid with a camphor-like odor. Used in soap making, dry cleaning, plasticizers, insecticides, and germicides.

Key: One of several types of small metal objects designed to fit mating slots in a shaft and the hub of a gear or pulley to provide a positive drive between them. Also, the name of the T handle wrench used on chucks.

Key agreement. : A method for negotiating a key value on-line without transferring the key, even in an encrypted form.

Key Lampholder: A lampholder with a flat or round "key" projecting from its side, which when turned operates an internal switching mechanism.

Key Rings: Devices used to hold fibers on slitter knives. Sometimes referred to as 'snap rings'.

Key Seat: A recessed groove (slot) machined into a shaft or a part going on the shaft (usually a wheel or gear).

Keyhole Specimen: A type of notched impact test specimen which has a hole and slot notch shaped like a keyhole.

Keystone Valve: A gas control valve that is used as a shut off valve for the ignition furnace.

kg: Kilogram. The SI unit of measurement of mass.

kibi (Ki) : Binary multiple prefix corresponding to kilobinary or 2¹⁰ or (2¹⁰)¹ or 1024. [IEC 1998]

K_{ic} (Plane Strain Fracture Toughness): The minimum value of K_{IC}. Represents the fracture toughness of a material independent of crack length, or loading system. Units are MPa/m or ksi/in.

Kick Off Plate: (KOP) A product that has went through the reversing mill and the #5 rougher.

Kicked Out: Loss of electrical power to any operating unit in the mill.

Kieselguhr: Diatomaceous earth, a finely porous material used for thermal insulation to 1100 C (2012 F).

Killed Steel: The term killed indicates that the steel has been sufficiently deoxidized to quiet the molten metal when poured into the ingot mold. The general practice is to use aluminum ferrosilicon or manganese as deoxidizing agents. A properly killed steel is more uniform as to analysis and is comparatively free from aging. However, for the same carbon and manganese content Killed Steel is harder than Rimmed Steel. In general all steels above 0.25% carbon are killed, also all forging grades, structural steels from 0.15% to 0.25% carbon and some special steels in the low carbon range. Most steels below 0.15% carbon are rimmed steel.

Kiln: An oven or furnace for burning, calcining or drying a substance.

Kiln Dried: Lumber artificially dried in a specially designed enclosure or lumber kiln.

Kiln Marks: Irregularities on the surface of refractors caused by deformation under load during burning.

Kilo: A prefix indicating one (1) thousand.

Kilo (k): Metric prefix for units of measurement equal to thousands (1000 or 10³). As an example 1 kilohertz (kHz) equals 1000hz.

kilo(k) : Decimal multiple prefix corresponding to a thousand or 103.

Kilocycle: A term denoting one thousand cycles.

kilogram (kg) : The kilogram is the SI unit of mass. It is a fundamental unit. It is equal to the mass of the international prototype of the kilogram preserved in France [1901]

Kilovolt: A term denoting one thousand volts.

Kilovolt (Kv): Unit of electrical potential equal to 1,000 volts.

kilovolt ampere kVA : The practical unit of apparent power, which is 1,000 volt-ampere.

Kilovolt-Ampere (kVa): A unit of apparent power, equal to 1,000 volt-amperes; the mathematical product of the volts and amperes in an electrical circuit.

Kilovolts Constant Potential: The potential in kilovolts of a constant voltage generator.

Kilovolts Peak: The crest value of the potential wave in kilovolts. When only one half of the wave is used, the crest value is to be measured on this half of the wave.

Kilowatt: The use of one thousand watts for one hour.

Kilowatt: Kilowatt (symbol: kW) is a unit of electric power. One kanal considered as 4500 square feet.

Kilowatt: A term denoting one thousand watts.

Kilowatt (kW): One thousand watts.

Kilowatt (kW): 1000 watts.

Kilowatt Hour: 1000 watts of real power. Expressed at kW.

Kilowatt Hour: it is a unit of energy equal to 1,000 watt-hours, or 3.6 megajoules

Kilowatt-electric (kWe): One thousand watts of electric capacity.

Kilowatthour (kWh): A measure of electricity defined as a unit of work or energy, measured as 1 kilowatt (1,000watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu.

Kilowatt-hour (kWh): One thousand watts acting over a period of 1 hour. The kWh is a unit of energy. 1 kWh=3600 kJ.

kilowatt-hour (kWh) : The standard unit of electricity supplied to the consumer. Equal to 1 kilowatt acting for 1 hour. $1 \text{ kWh} = 3.60 \times 10^6 \text{ J}$

Kilowatthour(kWh): Unit of energy consumption equal to 1000 watt-hours or the energy consumed at the rate to one kilowatt (kW) for a time of one hour.Equivalent to 3,600,000 joules.Generally used to specify a large energy consumption over a specific time interval.Residential energy is usually priced at the number of kilowatt-hours used for a month.

Kinetic energy: Energy available as a result of motion that varies directly in proportion to an object's mass and the square of its velocity.

kinetic energy : The energy which a body posses by virtue of its motion.

Kink: (1) for rolled products, an abrupt bend or deviation from flat which is caused by localized bending during handling. (2) for extrusions, an abrupt deviation from straightness. A kink can be caused by handling.

Kip: A unit load of 1000 lbs.

Kirchhoff,Gustav Robert: The German physicist noted for his research in spectrum analysis, optics, and electricity.Developed fundamental DC circuit laws dealing with current characteristics in a parallel circuit and voltage characteristics in a series circuit. His current law states that the current entering a connection has to equal the current leaving that connection, and that the sum of the load currents has to equal the source current (or sum of source currents for multiple parallel sources) ($I_T = I_1+I_2+-----+I_N$).His voltage law states

that around any closed loop of series connected components, the sum of the voltage drops must equal the source voltage (or sum of source voltages for multiple series connected sources. ($V_T = V_1 + V_2 + \dots + V_N$).

kirchoff's current law KCL: States that the algebraic sum of the currents entering a node (or a closed boundary) is zero.

kirchoff's voltage law KVL: States that the algebraic sum of the voltages around a closed loop is zero.

Kish: Free graphite which separates upon slow cooling of molten hypereutectic iron.

Kissing (Touching): Gating with minimum metal left at casting breakoff point, having a gate just kiss the surface.

klydonograph: An instrument for the detection and recording of the occurrence of lightning in transmission lines.

Knee-Point e.m.f.: Result of when a sinusoidal e.m.f. is applied to the secondary terminals of a current transformer is increased by 10% causes the exciting current to increase by 50%.

Knife Buildup: Excess metal that attaches to slitter knives. Excess metal can also attach to welder wheels, in which case it is called 'welder wheel buildup'.

Knife Gate Valve: Knife gate valves are mechanical devices used to restrict or shut-off the flow of a fluid or gas in a piping system. Knife gate valves use a flat plate, the knife, which slides in a channel into the path of the flow. Knife gate valves are most often associated with slurry solutions such as those seen in wastewater processing plants.

Knife Mark: See ?mark, knife?

Knife Wrench: Tool used to remove nuts on the knives when making knife changes or adjustments.

Knives: Circular metal discs that rotate on the slitter to sidetrim a coil to customer's spec. The distance between them determines the width of the coil.

Knock Out Mark: See ?Mark, knock out?

Knock Out Pins (Ejector Pins): Small diameter pins affixed to a pattern back up plate for removing cured mold in the shell molding process.

Knoop Hardness Number (Hk): A number related to the applied load and to the projected area of a rhombic based diamond indenter, with edge angles of $172\frac{1}{2} 30'$ and $130\frac{1}{2}$.

Knoop Hardness Test: A micro hardness test in which an elongated pyramidal diamond is pressed into the surface.

Knurl: A decorative gripping surface of straight line or diagonal design made by uniformly serrated rolls called knurls.

Kop Pusher: A machine that pushes the KOP on the ground, off the table after processing.

Kop Recirculating Filter: A filter that cleans the KOP pusher tank hydraulic oil by constantly recirculating the oil from the tank through the filter and then back to the tank.

Ksr, keyboard send/receive. : A combination teleprinter transmitter and receiver with transmission capability from the keyboard only. Compare with asr and ro.

KV: 1000 Volts

Kva: Stands for kilo volt amperes. It is a measurement of electrical power. It is made up of reactive power (KVAR) and real power (KW). It can be derived by multiplying the voltage by the current.

kVa: See Kilovolt-Ampere

kVA: 1) Apparent Power expressed in Thousand VoltAmps. 2) Kilovolt Ampere rating designates the output which a transformer can deliver at rated voltage and frequency without exceeding a specified temperature rise.

KVA: Kilovolt Amperes

KVAR: KVAR is the measure of additional reactive current flow which occurs when the voltage and current flow are not perfectly in phase.

kW: See kilowatt

kW: See "Kilowatt".

KW: Kilowatt, 1000 watts of power

kWe: See kilowatt-electric

kWh: See kilowatthour

kWh: See "Kilowatt Hour"

Kyoto Protocol: The result of negotiations at the third Conference of the Parties (COP-3) in Kyoto, Japan, in December of 1997. The Kyoto Protocol sets binding greenhouse gas emissions targets for countries that sign and ratify the agreement. The gases covered under the Protocol include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), per fluorocarbons (PFCs) and sulfur hexafluoride.

KYZ: A designator for the Form C pulse initiator output from a transducer.

L: A symbol used to express inductance. The unit of measure is a "Henry".

L: Denotes lead sheath

LD Process: An oxygen steel making Process named after the towns in Austria, Linz and Donawitz, where it was first developed. It is a modified Bessemer process, steel is produced in a solid bottom converter by injection of oxygen into the molten iron bath from a water cooled lance inserted through the converter mouth. Present day BOS (basic oxygen steelmaking) plants are developments of the LD Process.

La: Chemical symbol for Lanthanum

Labeled: Items to which a label, trademark, or other identifying mark of nationally recognized testing labs has been attached to identify the items as having been tested and meeting appropriate standards.

Lace: Area where the strip is joined together (with wire, bands, etc.) after being broken.

Lace: Strand of wire usually the same material as the mesh used to weave closed a split mesh.

Lacquer: A coating composition which is based on synthetic thermoplastic film forming material dissolved in organic solvent and which dries primarily by solvent evaporation during stoving operations.

Lacquer: The term used in cable manufacture to designate the liquid resin or compound applied to a fibrous braid to prevent fraying, wicking, moisture absorption, etc., in the braid.

Lad (local area data) channel. : Same as bell 43401 circuit.

Ladder Diagram (LD): One of the IEC 611313 programming languages.

Ladder Diagram (LD): the diagram used to represent the logics in the ladder ways. It is used to define or understand the logics very easily.

Lag: The condition where the current is delayed in time with respect to the voltage in an ac circuit (for example, an inductive load).

Lag: lag may be defined as any type of delay from the definite time. It may be intentional or unintentional.

lag : The angle delay between voltage signal and the corresponding current signal.

lag : The time delay between the output signal and the response time of the receiver of the signal.

Lagging: Slack in the strip.

lagging load: An inductive load with current lagging voltage.

lambert: An old unit of luminance. The luminance of a uniform diffuser of light which emits one lumen per square centimetre. 1 lambert = 10^{-4} lux

Lamellar Tear: A system of cracks or discontinuities aligned generally parallel to the worked surface of a plate. Usually associated with a fusion weld in thick plate.

Laminar Flow : A condition of flow in a passage that is typified by slow movement of fluid in a relatively straight path along the centerline of a passage.

Laminated Tape: A term used to describe a tape consisting of two or more layers, usually each layer being a different material, sealed or laminated together to form one tape.

Lamination: An abnormal structure resulting in a separation or weakness aligned generally parallel to the worked surface of the metal.

laminations: Thin layers or sheets. The term usually refers to the thin sheets of iron used to build up the core of a transformer.

Lamp: A light producing device consisting of a filament placed in a vacuum.

Lamp: A term generally used to describe artificial light. The term is often used when referring to a "bulb" or "tube."

Lamp: Information about the chosen lamp and its lumen depreciation and mortality are available from lamp manufacturers' literature. Rated average life should be determined for the specific hours per start; it should be known when burnouts occur in the lamp life

Lamp: lamp is the device which produce the light from electricity. It can be used to indicate a particular action also using some color codes.

Lamp Lumen Depreciation, LLD (Lighting): A complete light source unit, usually consisting of a light generating element (arc tube or filament), support hardware, enclosing envelope and base.

Lampholder: A device that establishes mechanical and electrical connection to an inserted lamp.

LAN: Local Area Network which is a shortdistance network used to link a group of computers or intelligent devices together, usually within a building.

LAN (Local Area Network): A network of computers and peripheral devices with a limited area such as a department, single building, or campus environment.

LAN Local Area Network: A data communications system confined to a certain area. The area served may consist of a single building, or a cluster of buildings.

Lan, local area network.: A data communications network confined to a limited geographic area (up to 6 miles or about 10 kilometers) with moderate to high data rates (100 kbps to 100 mbps). The area served may consist of a single building, a cluster of building, or a campus-type arrangement. It is owned by its user, includes some type or switching technology, and does not use common carrier circuits - although it may have gateways or bridges to other public or private networks.

Lance, Oxygen: A device, consisting of steel pipe, tubing, oxygen source, and controls which uses the heat of burning steel pipe for melting. Frequently used to open frozen tape or slag

holes.

Land: The surface on the periphery of a rotary cutting tool such as a milling cutter, drill tap or reamer which joins the face of the flute or tooth to make up the basic cutting edge.

Land use: The ultimate uses to be permitted for currently contaminated lands, waters, and structures at each Department of Energy installation. Land-use decisions will strongly influence the cost of environmental management.

Landfill gas: Gas that is generated by decomposition of organic material at landfill disposal sites. The average composition of landfill gas is approximately 50 percent methane and 50 percent carbon dioxide and water vapor by volume. The methane percentage, however, can vary from 40 to 60 percent, depending on several factors including waste composition (e.g. carbohydrate and cellulose content). The methane in landfill gas may be vented, flared, combusted to generate electricity or useful thermal energy on-site, or injected into a pipeline for combustion off-site.

Landline. : A general term applied to metallic conductors used for conveyance of intelligence.

Land-use restrictions: Constraints placed upon mining by societal policies to protect surface features or entities that could be affected by mining. Because laws and regulations may be modified or repealed, the restrictions, including industrial and environmental restrictions, are subject to change.

Langley: A unit or measure of solar radiation; 1 calorie per square centimeter or 3.69 Btu per square foot.

Language media format (lmf). : Consists of two alpha characters, which define the input media and the preferred output media.

Lanthanides: Commonly referred to as 'Rare Earth' metals. Examples Neodymium, Lanthanum and Yttrium.

Lap: A surface defect, appearing as a seam, caused by forging over hot metal, fins, or sharp corners and then rolling or forging them into the surface, but not welding them.

Lap Weld: A term applied to a weld formed by lapping two pieces of metal and then pressing or hammering, and applied particularly to the longitudinal joint produced by a welding process for tubes or pipe, in which the edges of the skelp are beveled or scarfed so that when they are overlapped they can be welded together.

Lap, line access procedure. : (in packet-switched networks) superseded by lapb.

lapb, line access procedure, balanced. : (in x25 packet-switched networks) a link initialization procedure which establishes and maintains communications between the dte and dce; lapb involves the t1 timer and n2 count parameters. All pdns now support lapb.

laplace transform: An integral transformation of a function from the time domain to the complex frequency domain. Used to analyse transients in circuits.

Lard Oil: A cutting oil made from animal fats usually mixed with mineral oils to reduce its cost and improve its quality.

Large Format Scanning: Large format scanning is a document scanning service predominately used in engineering, architecture and construction for the transfer of blueprints to computer aided design (CAD) software. Large format scanning is supported by both the hardware (scanner) and software solutions customized to accurately interpret the information relevant to the industry of interest. In CAD conversion, the scanning software

will interpret drawings, dimensions, and annotation, converting all of the entities to their CAD equivalents. Large format scanning is also used in some other industries, including mapping and art.

Large passenger car: A passenger car with more than 120 cubic feet of interior passenger and luggage volume.

Large pickup truck: A pickup truck weighing between 4,500-8,500 lbs gross vehicle weight (GVW).

laser: Acronym for Light Amplification by Stimulated Emission of Radiation. The laser produces a powerful, highly directional, monochromatic, and coherent beam of light.

Laser Cutting: Laser Cutting uses a high energy laser to remove material by melting, vaporizing, or burning. Laser cutting processes are common for engraving applications and also thin workpieces such as sheet metal.

Laser Engraving: Laser engraving is a process used to etch patterns and alphanumeric characters onto a surface. Laser engraving uses the heat generated by the laser to alter the surface, either by melting the material or causing it to fracture or flake. Laser engraving systems typically include the laser, a table to mount the workpiece onto, and a control mechanism used to move the laser and/or workpiece, and a controller used to automate the engraving process.

Laser Etched Awards: Laser etched awards are trophies, plaques or other awards made from glass or crystal. Words or images are etched on the surface using a laser engraving process.

Laser Etching: See Laser Engraving

Laser Marking: Laser marking is a process used to engrave or mark patterns and alphanumeric characters onto a surface. Laser marking uses the heat of the laser to alter the surface, a coating, or a bonding agent in order to place the marking on the surface or remove material in order to engrave the mark.

Laser Marking Machine: See Laser Marking Systems

Laser Marking Systems: Laser marking is a process used to engrave or mark patterns and alphanumeric characters onto a surface. Laser marking uses the heat of the laser to alter the surface, a coating, or a bonding agent in order to place the marking on the surface or remove material in order to engrave the mark. Laser marking systems typically include the laser, a table to mount the workpiece onto, and a control mechanism used to move the laser and/or workpiece, and a controller used to automate the marking process.

Lata, local access and transport area. : One of 161 usa geographical subdivisions used to define local (as opposed to long distance) telephone service.

latch: A non-clocked flip-flop.

latent heat: Quantity of heat required to effect a change of state of a unit mass of a substance from solid to liquid (latent heat of fusion) or from liquid to vapour (latent heat of vaporisation) without change of temperature.

Lateral Approach: When the target to be detected approaches the sensing face from the side (slide-by).

Lateral Bow: See ?Bow, Lateral?

Lateral Circuit: A tapoff line to take primary distribution from the main power line to a nearby load center.

Lateral communications. : Communications between adjacent (on left and/or right)

commands/units/formations, normally of equivalent level of command.

Lateral Expansion: A measured property used in Charpy Impact Testing. Refers to the increase width of the specimen after fracture.

Lateral Light Distribution: Lateral light distributions are classified by IES distribution Types I, II, III, IV and V. In general, the larger the number, the more is projected across the roadway. This allows the lighting designer to select the appropriate distribution pattern for

Lath Martensite: Martensite formed, partly in steel containing less than about 1.0% C and solely in steels containing less than about 0.5% C, as parallel arrays or packets of lath shape units about 0.1 to 0.3 m thick, and having a habit plane that is close to {111}.

Latitude and longitude: The distance on the earth's surface measured, respectively, north or south of the equator and east or west of the standard meridian, expressed in angular degrees, minutes, and seconds.

Lattice: Space lattice. Lattice lines and lattice planes are lines and planes chosen so as to pass through collinear lattice points, and non collinear lattice points, respectively.

lattice: A regular network of fixed points arranged in a geometrical pattern of straight lines.

Lattice: The regular periodic arrangement of atoms or molecules in a crystal.

Lauders Lines: Elongated surface markings or depressions caused by localized plastic deformation that results from discontinuous (in homogeneous) yielding. Also known as lauders bands, hartmann lines, piobert lines or stretchers.

Law of magnetic poles: Like poles repel, unlike poles attract.

Lay: A term used in cable manufacturing to denote the distance, of advance of one member of a group of spirally twisted members, in one turn, measured axially.

Lay Direction: 1) The direction in which the wires of a conductor are twisted. 2) The twist of conductors in a cable.

Lay Direction: The lay direction indicates the direction in which the litz is twisted. Left hand lay and right hand lay

Lay Length: The distance required to complete one revolution of helically laid strands of wires.

Lay Length: The physical length of something laid flat. The term is used for twisted pair cables.

Layer (1). : One of the divisions of the osi model.

Layer (2). : One of the divisions of sna and other communications protocols.

Layout Sample: A prototype forging or a ?cast? used to determine conformance for designed demensions

Lays: The twists in a twisted pair cable which, when varied, limit the potential for interference in a twisted pair cable.

lb: Pound

L-Band: L band, as defined by the IEEE, is the 1 to 2 GHz range of the radio spectrum.

L-band. :

LCD: Liquid Crystal Display

LCD: see Liquid crystal diode.

LDC: See Local Distribution Company.

LDC: A Line Drop Compensator is utilized to provide constant voltage at the load.

LDD: Luminaire Dirt Depreciation Factor

Leachate: The liquid that has percolated through the soil or other medium.

Leaching: A process in which metal is extracted from mined ore by means of adding a soluble substance. Commonly used in gold mining.

leaching: Washing out of a soluble constituent of a material.

Lead: Term used in conjunction with a cell or battery that utilizes lead and lead peroxide as the active plate materials in a diluted electrolyte solution of sulfuric acid and water. The nominal cell voltage is 2.1 volts.

Lead: it is a carbon compound having lusture and malleability property denoted as Pb

Lead Acid (Battery): The assembly of one or more cells with an electrolyte based on dilute sulfuric acid and water, a positive electrode of lead dioxide and negative electrodes of lead. Lead Acid batteries all use the same basic chemistry.

Lead Acid (Battery): it is the rechargeable battery having electrodes of lead and acid as electrolyte.

Lead acid battery: An electrochemical battery that uses lead and lead oxide for electrodes and sulfuric acid for the electrolyte.

Lead Acid Battery: The higher oxide of lead present in charged positive plates. It is frequently referred to as lead peroxide.

Lead Dioxide (Battery): See Lead Dioxide.

Lead Dioxide (Battery): it is the dioxide of lead having chemical formula as PbO_2 . it is insoluble in water.

Lead Peroxide: A lead salt formed by the action of sulfuric acid on lead oxide during paste mixing and formation. It is also formed electromechanically when a battery is discharged.

Lead Peroxide: A poisonous brown crystalline compound, PbO_2 , used as an oxidizing agent in electrodes, batteries, and explosives.

Lead Screw: The long precision screw located in front of the lathe bed geared to the spindle and used for cutting threads. Also, the table screw on the universal milling machine when geared to the indexing head for helical milling.

Lead Sulfate: The condition where the current precedes in time with respect to the voltage in an ac circuit (for example, a capacitive load).

Lead Sulfate: $PbSO_4$. It is an oxidation product of primary lead sulfide ore, galena. It is a colorless solid material.

Lead Time: Delivery time for an item of inventory to be moved from a source location to a destination via a specific route. Detail is specific to the level of the location. Also the time to produce a customer's order from order placement to shipment.

lead : The angle advance between voltage signal and the corresponding current signal.

Leaded gasoline: A fuel that contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

Leaded premium gasoline: Gasoline having an antiknock index $(R+M/2)$ greater than 90 and containing more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon.

Leaded regular gasoline: Gasoline having an antiknock index $(R+M/2)$ greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon.

Leaded Steels: When added to steel, lead does not go into solution but exists in a very finely divided state along the grain boundries. It greatly assists machinability as it acts as a lubricant

between the steel and the tool face. Lead is normally added in amounts between 0.15 0.35% and when combined with similar amounts of sulphur, optimum machinability is attained as in such steel as B 970 230M07 Pb.

Leading edge: In reference to a wind energy conversion system, the area of a turbine blade surface that first comes into contact with the wind.

leading load: A capacitive load with current leading voltage.

Leak Through: Unwanted steam or water flow through a closed valve.

leakage current: Electric current in an unwanted conductive path under normal operating conditions.

Leakage Current: The amount of current that flows through, or leaks from, the output of an energized device when the device is in the OFF-STATE. Most common problem involves leakage current when a device is wired as an input to a Programmable Controller. Leakage current should be less than 1.7 mA.

leakage factor: Ratio of the total flux to the useful flux is defined as the leakage factor. It has a value of around 1.2 for electrical machines.

Leakage Inductance: it is the leakage of inductance due to leakage flux not linking with all turns of each imperfectly-coupled winding.

leakage inductance : A small inductance associated with the flux of a transformer winding which are not magnetically coupled to the other windings of the transformer.

Leakoff: Excess steam and condensate water that leaks out through the packing gland.

Lease and plant fuel: Natural gas used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and as fuel in natural gas processing plants.

Lease condensate: Light liquid hydrocarbons recovered from lease separators or field facilities at associated and non-associated natural gas wells. Mostly pentanes and heavier hydrocarbons. Normally enters the crude oil stream after production.

Lease equipment: All equipment located on the lease except the well to the point of the "Christmas tree."

Lease fuel: Natural gas used in well, field, and lease operations, such as gas used in drilling operations, heaters, dehydrators, and field compressors.

Lease operations: Any well, lease, or field operations related to the exploration for or production of natural gas prior to delivery for processing or transportation out of the field. Gas used in lease operations includes usage such as for drilling operations, heaters, dehydrators, field compressors, and net used for gas lift.

Lease separation facility: A facility installed at the surface for the purpose of (a) separating gases from produced crude oil and water at the temperature and pressure conditions set by the separator and/or (b) separating gases from that portion of the produced natural gas stream that liquefies at the temperature and pressure conditions set by the separator.

Lease separator: A facility installed at the surface for the purpose of separating the full well stream volume into two or three parts at the temperature and pressure conditions set by the separator. For oil wells, these parts include produced crude oil, natural gas, and water. For gas wells, these parts include produced natural gas, lease condensate, and water.

leased line: A dedicated circuit, typically supplied by the telephone company, that permanently connects two or more user locations. These lines are used to transmit data.

Leased line. : A telephone line reserved for the exclusive use of a leasing customer without inter-exchange switching arrangements. A leased line may be point-to-point or multipoint.

Leasehold Production: . Natural gas liquids produced, extracted, and credited to a company's interest.

Leasehold Reserves: . Natural gas liquid reserves corresponding to leasehold production defined above.

Leasehold reserves: Natural gas liquid reserves corresponding to the leasehold production defined above.

least cost alternatives: The lowest cost option for providing for incremental demands. In least cost planning to serve electric demands, the least cost alternatives are often construed broadly to include demand-side management as well as various generation and purchased power options.

Least Significant Bit (LSB): Refers to the smallest increment of resolution in an A/D or D/A conversion.

LED: Light Emitting Diode

LED: light emitting diode emits light when current is passed through it. A semiconductor light source that radiates light such as red, green, yellow and white, or invisible light such as infra red.

LED (Light Emitting Diode): Solid State device which produces visible red, green, or yellow light or invisible infrared light radiation.

Led, light-emitting diode. : Semiconductor device, much more reliable than an incandescent lamp, used for status display purposes in electronic equipment.

LEFM (Linear Elastic Fracture Mechanics): A method of fracture analysis that can determine the stress required to induce fracture instability in a structure with a crack like flaw of know size and shape.

Legacy Costs: Any costs that are associated with prior operations. Employee liabilities (pensions and health care benefits) and environmental cleanup costs usually are included under this moniker.

lens: Any device which causes a beam of rays to converge or diverge on passing through it.

Lenz's Law: Basic law of electromagnetic induction which states that an induced voltage will have a polarity that opposes the current change that produced it.

lenz's law: When a coil and a magnetic field move relative to each other, the electric current is induced in the coil will have a magnetic field opposing the motion.

LESCW: Low energy safety circuit wire.

Lessee: An independent marketer who leases the station and land and has use of tanks, pumps, signs, etc. A lessee dealer typically has a supply agreement with a refiner or distributor and purchases products at dealer tank-wagon prices. The term "lessee dealer" is limited to those dealers who are supplied directly by are finer or any affiliate or subsidiary of the reporting company. "Direct supply" includes use of commission agent or common carrier delivery.

letter of intent LOI: - Issued by CEB to a Generating Company to signify CE13's intent to purchase power from a Generating Company at a particular location.

Level (1). : Magnitude, as in signal level or power level.

Level (2). : Used as a synonym for layer.

Level Indicator: A device (electronic or mechanical) that shows the volume of oil in a tank.

Level Switch: An electro mechanical device which senses the level of fluid in a chamber and opens or closes a digital switch to indicate a change of state.

Level Translator: The interface provided to control the different level of voltages which connects different components.

Level Transmitter: An electromechanical device, which senses the level of fluid in a chamber and produces an analog signal that, corresponds with the change of state in the chamber.

Leveler Chatter: See ?Mark, Chatter (Roll or Leveler)?

Leveler Mark: See ?Dent, Repeating?

Leveler Streak: See ?Streak, Leveler?

Leveling Line: A process to flatten any shape deficiencies (wavy edges and buckles) in the sheet, prior to final shipment. Most cold rolled sheet initially has a crowned cross section that, if such a shape is undesirable to the customer, must be flattened in the leveling line.

Leveling Rolls: A set of five adjustable rolls that flatten or level the front end strip of steel when running through the #1 and #2 feeders.

Leveling, Stretcher: Leveling carried out by uniaxial tension

Levelized cost: The present value of the total cost of building and operating a generating plant over its economic life, converted to equal annual payments. Costs are levelized in real dollars (i.e., adjusted to remove the impact of inflation).

Leverage: A gain in output force over input force by sacrificing the distance moved. Mechanical advantage or force multiplication.

Leverage ratio: A measure that indicates the financial ability to meet debt service requirements and increase the value of the investment to the stockholders. (i.e., the ratio of total debt to total assets).

LEVP: Low Emissions Vehicle Program.

Lf, line feed. : An ascii or ebcdic control character used to move to the next line on a printer or display terminal.

LHV: Lower Heating Value.

Li: Chemical symbol for Lithium.

Liability: An amount payable in dollars or by future services to be rendered.

Licensed site capacity: Capacity (number of assemblies) for which the site is currently licensed.

Licensees: Entity that has been granted permission to engage in an activity otherwise unlawful (i.e., hydropower project).

Life Cycle: A test performed on a material or configuration to determine the length of time before failure in a controlled, usually accelerated, environment.

Life Cycle Costing: An accounting method of costing where expenses are allocated over the life of the product. Life cycle costs are often lower for stainless steel than for alternatives despite a higher initial outlay, because stainless products generally last longer and require little maintenance.

Life extension: Restoration or refurbishment of a plant to its original performance without the installation of new combustion technologies. Life extension results in 10 to 20 years of plant life beyond the anticipated retirement date, but usually does not result in larger capacity.

Lift: The measure of the capability of a pump to raise fluid from a lower to higher level at its

inlet port without damage to the pump.

Lift: The force that pulls a wind turbine blade, as opposed to drag.

Lifting costs: The costs associated with the extraction of a mineral reserve from a producing property.

Lifting Magnets: A magnet is an object that attracts ferromagnetic materials such as iron. The magnet creates a magnetic field that generates the attractive force. Lifting magnets are high strength magnets that generate a very strong magnetic field and attractive force. The attractive force can then be used to lift and move large metal objects. Lifting magnets are typically found in industrial environments and are used to move large pieces of material from one place to another.

Light: A factor used in calculating luminance after a given period of time and under given conditions. It takes into account temperature and voltage variations, dirt accumulation on luminaire and lit surfaces, lamp depreciation, maintenance procedures and atmos

light: Any radiation capable of causing a visual sensation direct i.e. Visible electromagnetic radiation in the wavelength range 400 to 700 nano meter.

Light: Light is electromagnetic radiation within a certain portion of the electromagnetic spectrum visible to humans.

Light: Measured in wavelength, wavelenghts of visible light range between 400 and 700 nanometers.

Light bulbs: A term generally used to describe a man-made source of light. The term is often used when referring to a "bulb" or "tube".

Light gas oils: Liquid petroleum distillates heavier than naphtha, with an approximate boiling range from 401 degrees to 650 degrees Fahrenheit.

Light Gauge Steel: Very thin steel sheet that has been temper rolled or passed through a cold reduction mill. Light gauge steel normally is plated with tin or chrome for use in food containers.

Light Incident: The condition met when light from the emitter is reaching, or incident upon, the receiver.

Light Interrupted: The condition met when light from the emitter is not reaching, or incident upon, the receiver.

Light Loss Factor (LLF): A grade level Box or Cover rating. See "Incidental Light Traffic".

Light Metal: One of the low density metals such as aluminum, magnesium, titanium, beryllium, or their alloys.

light oil: Lighter fuel oils distilled off during the refining process. Virtually all petroleum used in internal combustion and gas turbine engines use light oil.

Light rail: An electric railway with a "light volume" traffic capacity compared to "heavy rail." Light rail may use exclusive or shared rights-of-way, high or low platform loading, and multi-car trains or single cars. Also known as "street car," "trolley car," and "tramway."

Light Source: Type of light used in the emitter portion of the photoelectric. Most common, pulse modulated LED or incandescent lamp.

Light Special Treatment: A surface treatment of dried in place chromate for Weirton Steel's electrogalvanized product (Weirzin) which provides corrosion resistance. A lighter film weight is applied as compared to special treatment. (See Special Treatment).

Light Traffic: Energy that is capable of exciting the retina and producing a visual sensation.

Light Traffic: The standard lights used to indicate the action to traffic.

Light trapping: The trapping of light inside a semiconductor material by refracting and reflecting the light at critical angles; trapped light will travel further in the material, greatly increasing the probability of absorption and hence of producing charge carriers.

Light trucks: All single unit two-axle, four-tire trucks, including pickup trucks, sports utility vehicles, vans, motor homes, etc. This is the Department of Transportation definition. The Energy Information Administration defined light truck as all trucks weighing 8,500 pounds or less.

Light warning set (lws). : A mobile lightweight radar early warning apparatus used in air reporting.

Light water: Ordinary water (H₂O), as distinguished from heavy water or deuterium oxide (D₂O).

Light water: Ordinary water (H₂O) as distinct from heavy water.

Light water reactor (LWR): A nuclear reactor that uses water as the primary coolant and moderator, with slightly enriched uranium as fuel.

Light water reactor (LWR): A common nuclear reactor cooled and usually moderated by ordinary water.

light year: A measure of astronomical distances. 1 light year = 9.461 x 10¹⁵ m

Light-duty vehicles: Vehicles weighing less than 8,500 lbs (include automobiles, motorcycles, and light trucks).

Lighted Handle: A switch with an integral lamp in the actuator that lights when the switch is in the OFF position.

Light-emitting diode (LED): A semiconductor diode that emits light as current flows from the cathode to the anode across its PN junction.

Light-induced defects: Defects, such as dangling bonds, induced in an amorphous silicon semiconductor upon initial exposure to light.

Lighting Arrester: A device that protects power lines and equipment against high voltage lightning surges and switching surges. Connected from line to ground potential, the device has a very high resistance to current flow at normal voltages.

Lighting Arrester: Device used on Power Systems above 1000V to protect the insulation and conductors of the system from the damaging effects of lightning. It diverts the lightning surge to earth.

Lighting conservation feature: A building feature or practice designed to reduce the amount of energy consumed by the lighting system.

Lighting Demand-Side Management (DSM) program: ADSM program designed to promote efficient lighting systems in new construction or existing facilities. Lighting DSM programs can include certain types of high-efficiency fluorescent fixtures including T-8 lamp technology, solid state electronic ballasts, specular reflectors, compact fluorescent fixtures, LED and electro-luminescent Emergency Exit Signs, High Pressure Sodium with switchable ballasts, Compact Metal Halide, occupancy sensors, and daylighting controllers.

Lighting equipment: These are light bulbs used to light the building's interior, such as incandescent light bulbs, fluorescent light bulbs, compact fluorescent light bulbs, and high-intensity discharge (HID) lights.

Lighting Maintenance Factor (MF): The result of time-dependent depreciation effects must

be considered in the initial design. Regular maintenance is particularly important with regard to energy conservation and these plans, once incorporated into the design, should be carried out or the

Lightning: A distinction is made between Lightning and Switching impulses on the basis of duration of the wave front. Impulses with wavefront durations of up to a few tens of microseconds are in general considered to be lightning impulses. Those having durations

lightning: Any form of visible electric discharge between thunder clouds or between a thunder cloud and the earth. Ninety percent of all lightning never touches the ground - it occurs inside the thunder cloud or jumps from cloud to cloud.

Lightning: the natural light which comes from the sky. It is the sudden electrostatic discharge during electrical strome generated between electrical charged clouds.

Lightning & Switching Impulses: Lightning is a powerful natural electrostatic discharge produced during a thunderstorm. Lightning's abrupt electric discharge is accompanied by the emission of light.

lightning arrester: A device used to pass large impulses to ground. It is vital that this device be placed upstream from the equipment to be protected.

Lightning Arresters: Lightning arresters are devices for protecting many different pieces of equipment such as, power poles and towers, power transformers, circuit breakers, bus structures, and steel superstructures, from damage from lightning strikes.

lightning rod: A grounded metallic rod set up on a structure (like a building) to protect it from lightning.

Light-on Operation: Output mode that will result in an output turning on when light from the emitter is incident upon the receiver.

Light-Powered Sensor (3 or 4-Wire): A sensor that draws its operating current (burden current) directly from the line. Its operating current does not flow through the load, and a minimum of three connections (3-wire) are required. A 4-wire sensor has complimentary outputs and requires four connections.

Lights: All of the light bulbs controlled by one switch are counted as one light. For example, a chandelier with multiple lights controlled by one switch is counted as one light. A floor lamp with two separate globes or bulbs controlled by two separate switches would be counted as two lights. Indoor and outdoor lights were counted if they were under the control of the householder. This would exclude lights in the hallway of multi-family buildings.

Lignite: The lowest rank of coal, often referred to as brown coal, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent The heat content of lignite ranges from 9 to 17 million Btu per ton on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million Btu per ton, on the as-received basis (i.e. containing both inherent moisture and mineral matter).

LIHEAP: Low-Income Home Energy Assistance Program.

Limit Switch: A protective device used to open or close electrical circuits when certain limits, such as temperature or pressure, are reached.

Limit Switch: The electromechanical device switches used to limit or control any action upto safe level. They are generally used to control the air supply in machines.

Limited Approach Boundary: An approach limit at a distance from an exposed live part

within which a shock hazard exists.

Limited Approach Boundary: Limited approach boundary as a shock protection boundary to be crossed by only qualified persons (at a distance from a live part) which is not to be crossed by unqualified persons unless escorted by a qualified person.

Limited distance mode. : See line driver.

Limited probability of exploitation (lpe). : All those measures and techniques, both operational and technical, that may be used to restrict the unauthorised exploitation of acoustic and electromagnetic radiations.

Limited probability of intercept (lpi).: All those measures and techniques, both operational and technical, that may be used to restrict the unauthorised intercept of own acoustic and electromagnetic radiations.

Limited range of intercept (lri). : All those measures and techniques, both operational and technical, that may be used to restrict the range at which unauthorised intercept may be made of own acoustic and electromagnetic radiations.

Limiter: A special purpose fuse which is intended to provide short circuit protection only.

limiter. : Any device which sets (or tends to set) some boundary value or value upon a signal. In particular, a limiter may be a device which, for varying inputs below a certain instantaneous value gives a proportional output, but, for inputs whose instantaneous amplitude is higher than a predetermined value, gives a constant peaks output.

Limiting (hard). : Hard limiting is a limiting action with negligible variation in output in the range where the output is limited. Normal twts are hard limiting when driven into saturation.

Limiting Range Of Stress: The greatest range of stress that a metal can withstand for an indefinite number of cycles without failure. If exceeded, the metal fractures after a certain number of cycles, which decreases as the range of stress increases.

Limiting Ruling Section: The maximum diameter of cross section of a bar or component in which certain specified mechanical properties are achieved after heat treatment.

Limiting Value of the output current: The upper limit of the output current which cannot, by design be exceeded under any conditions.

Limits Of Proportionality: The stress (load divided by original area of cross section of the test piece) at which the strain (elongation per unit of gauge length) ceases to be proportional to the corresponding stress. It is usually determined from a load elongation line ceases to be straight.

Line: A rubber dielectric cover for conductor that is used to electrically isolate a worker from an energized conductor. Line hose is made by W.H. Salisbury & Company.

line: A designation of one or more power-carrying conductors for power distribution. The brown (or red) wire is the line conductor, the blue (or black) wire is the neutral, and the green-yellow (or green) wire is the ground. The voltage difference between the line conductor and the neutral is the supply voltage.

Line: line may be referred to any line like fuel line or high or low voltage line.

line conditioner: A line conditioner contains multiple protection devices in one package to provide, for example, electrical noise isolation and voltage regulation.

Line discipline. : Archaic term for communications protocol.

Line driver. :

Line Hose: High voltage lines can be used to transmit R. F. carrier signals for the purposes of

voice communication, remote signaling and control. The frequency range from 30 to 500 kHz has proven to be advantageous for high frequency carrier transmission. Line trap

Line Hose: line hose used to avoid accidental contact with energized parts on 100 and 200 Amp single phase meter sockets

Line loss: Electric energy lost because of the transmission of electricity. Much of the loss is thermal in nature.

Line Marking: Lines are used as the identifying marks on the heavy Tin coated side of the strip to identify it to the customer.

Line Pipe: Pipe used in the surface transmission of oil, natural gas and other fluids.

Line Regulation: Line regulation is a measure of the ability of the power supply to maintain its output voltage given changes in the input line voltage. Line regulation is expressed as percent of change in the output voltage relative to the change in the input line voltage.

Line Speed: Speed at which the coil is processed through the line; Platers may run 1800+ feet per minute.

line to line: A term used to describe a given condition between conductors of a multiphase feeder.

line to neutral: A term used to describe a given condition between a phase conductor and a neutral conductor.

Line Traps: Refers to the conductor in an overhead or underground distribution or transmission line.

Line Traps: The circuit used to prevent high frequency signals to unrequited destinations. This is maintainance free resonant circuit.

Line turnaround. : The reversal of transmission direction on a half-duplex circuit.

line voltage: The voltage between two lines (or phases) of a three phase system is defined as the line-to-line voltage or more commonly as the line voltage. For a balanced three phase system, the line voltage is $\sqrt{3}$ times the phase-to-neutral voltage.

Line Voltage: The voltage existing in a phase conductor in an electrical circuit, either phase to ground (neutral) or phase to phase.

line : A line is a system of poles, conduits, wires, cables, transformers, fixtures, and accessory equipment used for the distribution of electricity to the public.

Lineal Footage Counter: Electronic device used to count lineal footage of a coil.

Linear: A circuit or component where the output is a straight line (direct proportion) function of the input.

Linear: having one dimension only length

Linear Actuator: A device for converting hydraulic energy into linear motion, i.e. a cylinder or ram.

Linear Bearings: A linear bearing is used to constrain motion in only one direction - linear translation. Linear bearings are also known as linear slides and are categorized as either rolling element bearings or plain bearings. Rolling element bearings use balls or cylinders between the bearing surfaces, while plain bearing do not include any additional components between the bearing surfaces.

linear circuit: One whose output is linearly related to the input. A circuit which obey's Ohm's law.

Linear Gantry: A linear gantry is a support structure used to suspend and translate a platform

over another area. A linear gantry can be large, as in the case of a gantry crane, or small, such as in an automated milling machine.

Linear Guide System: A linear guide system is made up of slide rails and guide blocks or guide rollers that are used to translate a carriage along the rails. Linear guide systems are used in many different applications and come in many different designs. The guide systems are typically low friction to provide for easy actuation of the carriage unit.

Linear Incremental Encoders: An encoder is any device or method used to translate information from one format to another. In the case of machinery systems, encoders are typically used to convert transducer signals measure position and orientation to a signal that is sent to a processed by a control system. Incremental encoders are used in conditions where the position can be reported relative to the last known position and a fixed reference position is not necessary. In a linear incremental encoder, the position is measured from a linear scale and the output is in the form of sine/cosine signals.

linear motor: A form of motor (normally induction motor) in which the stator and rotor are linear instead of cylindrical and parallel instead of coaxial.

Linear Rail Slides: Linear rail slides are mechanisms used in industrial machines and complex systems to precisely move components in a linear direction. There are many different designs of linear rail slides, depending on the specific application and requirements.

Linear Regulator: it regulates the and maintain the steady voltage. The resistance provided between the circuit control the voltage output.

Linear Variable Differential Transformer (LvdT): An electromechanical linear device that produces an analog signal in proportion to the difference in distance between a magnet and separate fixed coil.

Linear Variable Transformer (LVT): An electro mechanical linear device that produces an analog signal in proportion to the difference in velocity between a magnet and a separate fixed coil.

Linearity: The division of an instruments response from a straight line.

Linearity..: The property of a transmission medium or of an item of equipment that allows it to carry signals without introducing distortion

Line-commutated inverter: An inverter that is tied to a power grid or line. The commutation of power (conversion from DC to AC) is controlled by the power line, so that, if there is a failure in the power grid, the Photovoltaic system cannot feed power into the line.

Line-miles of seismic exploration: The distance along the Earth's surface that is covered by seismic surveying.

Liner: The slab of coating metal that is placed on the core alloy and is subsequently rolled down to clad sheet as composite

Liner: Cloth gloves used to line the inside of a rubber insulating glove.

Lines, Communication: The conductors and their supporting or containing structures which are used for public or private signal or communication service, and which operate at potentials not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. If the lines are operating at less than 150 volts, no limit is placed on the transmitted power of the system. Under certain conditions, communication cables may include communication circuits exceeding these limitations where such circuits are also used to supply power solely to

communication equipment.

Lining: Inside refractory layer of firebrick, clay, sand, or other material in a furnace or ladle.

Link: A pipe loop that connects one header to another.

Link: The basic, permanently installed, horizontal cabling path between the work area outlet and telecommunications closet cross-connect. Often referred to as the contractor link.

Link budget. : The power budget of a given communication channel which enables the received signal of quality to be evaluated controlled by amps.

Link.: A telecommunication facility with specified characteristics between two points. Notes: (1) The type of transmission path or capacity is normally indicated. (2) Synonymous with transmission path.

Link.: Communications circuit or transmission path connecting 2 points.

Lip Of A Drill: The sharp cutting edge on the end of a twist drill.

Liquation: Partial melting of an alloy.

Liquefied natural gas (LNG): Natural gas (primarily methane) that has been liquefied by reducing its temperature to -260 degrees Fahrenheit at atmospheric pressure.

Liquefied petroleum gases (LPG): A group of hydrocarbon gases, primarily propane, normal butane, and isobutane, derived from crude oil refining or natural gas processing. These gases may be marketed individually or mixed. They can be liquefied through pressurization (without requiring cryogenic refrigeration) for convenience of transportation or storage. Excludes ethane and olefins

Liquefied refinery gases (LRG): Hydrocarbon gas liquids produced in refineries from processing of crude oil and unfinished oils. They are retained in the liquid state through pressurization and/or refrigeration. The reported categories include ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

liquid: A state of matter between a solid and a gas. Liquids assume the shape of the vessel containing them, other than the top surface which will assume a horizontal position when free to air. They are only slightly compressible.

Liquid Carburizing: A widely used method of case hardening steel that eliminates scaling and the tendency to decarburisation and results in clean components. Sodium cyanide is the common media for this process, usually heated within the range of 900-930°C. It is advisable to pre heat the components in neutral salts to avoid a temperature drop resulting from immersing cold components into the cyanide. After carburising, either single quench hardening or refining and hardening and tempering is carried out.

Liquid collector: A medium-temperature solar thermal collector, employed predominantly in water heating, which uses pumped liquid as the heat-transfer medium.

Liquid crystal display (LCD): A display type using changes in reflectivity to generate various characters.

liquid crystal display, LCD: Displays made from liquid crystals which usually change from transparent to opaque in the presence of electric or magnetic fields. They are commonly used in digital displays.

Liquid fuels: All petroleum including crude oil and products of petroleum refining, natural gas liquids, biofuels, and liquids derived from other hydrocarbon sources (including coal to liquids and gas to liquids). Not included are liquefied natural gas (LNG) and liquid hydrogen. See petroleum and other liquids.

Liquid Level Gauge: Gauge to visually indicate the fluid level in a reservoir or tank.

Liquid metal fast breeder reactor: A nuclear breeder reactor, cooled by molten sodium, in which fission is caused by fast neutrons. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Liquidation: In commodities market parlance, selling long positions to counterbalance previous buying.

Liquidus: In a constitutional diagram, the locus of points representing the temperatures at which various components commence freezing on cooling or finish melting on heating.

Lissajous pattern : The pattern appearing on an oscilloscope when harmonically related signals are applied to the horizontal and vertical inputs of an oscilloscope.

Listed: Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate designated standards or has been tested and found suitable for use in specified manner.

Listening watch (radio communication). : A continuous receiver watch established for the reception of traffic addressed to, or of interest to, the unit monitoring the watch, with complete log optional. See guard (radio communication).

Lithium-ion batteries: The rechargeable batteries in which lithium ions moves from negative electrodes to positive electrode during discharging. Li-ion batteries used in electronics devices like mobile phones.

Litz Wire: A conductor made up of several insulated twisted wires to reduce skin effect and lower radio and frequency losses.

live part : A conductor or conductive part intended to be energised in normal use, including a neutral conductor but, by convention, not a PEN conductor.

LLF (Lighting): Light Loss Factor

LMP: Low molecular weight polyethylene.

Lna - low noise amplifier. : An amplifier whose primary characteristic is the ability to output a high signal-to-noise ratio, thus low noise temperature contribution to a receiver

LNG: See Liquefied Natural Gas.

Load: A device or apparatus that uses the energy of a circuit to perform work. May also refer to the power used by a device, machine, or a combination of many.

Load: Refers to a group of rubber insulating products used to electrically connect apparatus with which load can be separated manually. Loadbreak products are manufactured by T&B Elastimold.

load: Any passive electrical device connected to a power source may be called by the general term of "load". It is the amount of electric power delivered or required at any specific point or points on a system. The requirement originates at the energy consuming equipment of the consumers. [Unit kW or MW]

Load: Anything in an electrical circuit that, when the circuit is turned on, draws power from that circuit.

Load: Electrical load is the devices connected to output terminals of the system or mechanical

load is resistance against any machine or power generator .

Load: Any device which current flows through and has a voltage drop across it.

Load (electric): An end-use device or customer that receives power from the electric system. Glossary of Terms Used in NERC Reliability Standards.

Load Bank: A device which is used to develop a electrical load.

Load break: See "Coil Loss".

Load break: the device used to control to disconnect the specific limit of current and voltage

load center : A limited geographical area where large amounts of power are used by consumers.

Load control program: A program in which the utility company offers a lower rate in return for having permission to turn off the air conditioner or water heater for short periods of time by remote control. This control allows the utility to reduce peak demand.

Load curve: The relationship of power supplied to the time of occurrence. Illustrates the varying magnitude of the load during the period covered.

Load diversity: The difference between the peak of coincident and noncoincident demands of two or more individual loads.

load diversity : The load condition that exists when the peak demands of a variety of electric consumers occur at different times.

load duration curve LDC : A curve that displays load values on the horizontal axis in descending order of magnitude against percent of time (on the vertical axis) the load values are exceeded.

Load factor: The ratio of the average load to peak load during a specified time interval.

load factor: The ratio of the average load supplied (kW) during a designated period to the peak or maximum load (kW) occurring during that period.

Load Factor of a Machine, Plant, or System: The ratio of the average power to the peak power during a specified period of time. In each case, the interval of maximum load and the period over which the average is taken should be definitely specified. The proper interval and period are usually dependent upon local conditions and upon the purpose for which the load factor is to be used.

Load following: Regulation of the power output of electric generators within a prescribed area in response to changes in system frequency, tie line loading, or the relation of these to each other, so as to maintain the scheduled system frequency and/or established interchange with other areas within predetermined limits.

load forecast : Estimate of electrical demand or energy consumption at some future time.

Load leveling: Any load control technique that dampens the cyclical daily load flows and increases baseload generation. Peak load pricing and time-of-day charges are two techniques that electric utilities use to reduce peak load and to maximize efficient generation of electricity.

load line: Locus of instantaneous operating points used to find the exact operating values of voltage and current.

Load Loss: 1) The amount of electrical power required by connected electrical equipment. 2) The total impedance of all the items in the output circuit.

Load loss (3 hours): Any significant incident on an electric utility system that results in a continuous outage of 3 hours or longer to more than 50,000 customers or more than one half

of the total customers being served immediately prior to the incident, whichever is less.

Load Loss Factor : the calculated ratio of average load loss to the peak load loss.

load management: Techniques used by utilities to manage daily and/or seasonal fluctuations in customer demand.

Load management technique: Utility demand management practices directed at reducing the maximum kilowatt demand on an electric system and/or modifying the coincident peak demand of one or more classes of service to better meet the utility system capability for a given hour, day, week, season, or year.

Load on equipment: One hundred percent load is the maximum continuous net output of the unit at normal operating conditions during the annual peak load month. For example, if the equipment is capable of operating at 5% over pressure continuously, use this condition for 100% load.

load profile : Information on a consumer's usage over a period of time, sometimes shown as a graph.

Load reduction request: The issuance of any public or private request to any customer or the general public to reduce the use of electricity for the reasons of maintaining the continuity of service of the reporting entity's bulk electric power supply system. Requests to a customer(s) served under provisions of an interruptible contract are not a reportable action unless the request is made for reasons of maintaining the continuity of service of the reporting entity's bulk electric power supply.

Load Regulation: the ability of the equipment to maintain the constant voltage and current for the output current .

Load shape: A method of describing peak load demand and the relationship of power supplied to the time of occurrence.

load shape : A curve showing power (kW) supplied (on the horizontal axis) plotted against time of occurrence (on the vertical axis), and illustrating the varying magnitude of the load during the period covered.

Load shedding: Intentional action by a utility that results in the reduction of more than 100 megawatts (MW) of firm customer load for reasons of maintaining the continuity of service of the reporting entity's bulk electric power supply system. The routine use of load control equipment that reduces firm customer load is not considered to be a reportable action.

load shifting : A load shape objective that involves moving loads from peak periods to off-peak periods.

Load Types: Constant Horsepower- The term is used in certain types of loads where the torque requirement is reduced as the speed is increased and vice-versa. The constant horsepower load is usually associated with metal removal applications such as drill presses, lathes, milling machines and other similar types of applications. Constant Torque -is a term used to define a load characteristic where the amount of torque required to drive the machine is constant regardless of the speed at which it is driven. For example, the torque requirement for most conveyors is constant. Variable Torque - Variable torque is found in loads having characteristics requiring low torque at low speeds and increasing values of torque as the speed is increased. Typical examples of variable torque loads are centrifugal fans and centrifugal pumps.

Load-Break Switch: A switch which is designed for, and intended to open a circuit which

may be under load.

Loaded line, loading coils. : A telephone line equipped with coils (called loading coils) which minimize voice-frequency amplitude distortion by restoring the response at the higher frequencies with the voice bandwidth. Not generally suitable for line driver or local dataset applications.

Loading: A condition caused by grinding the wrong material with a grinding wheel or using too heavy a grinding action.

loading effect: Connection of a meter (an ammeter in series or a voltmeter in shunt) to a circuit to make a measurement alters the original circuit in that it draws some energy from the circuit. The error caused is known as the loading effect.

Loading Line Valve: Valve which isolates or stops a loading line signal.

Loading Lines: Lines that supply a pressure signal to a control device or measuring instrument.

Loading machine: is used in conventional mining to scoop broken coal from the working area and load it into a shuttle car, which hauls the coal to mine cars or conveyors for delivery to the surface.

Load-Powered Sensor: A sensor that draws its operating current (leakage current) through the load. The sensor is always in series with the load and only two connections are required.

Load-serving entity (electric): Secures energy and transmission service (and related Interconnect Operations Services) to serve the electrical demand and energy requirements of its end-use customers. See NERC definition.

lobe switching. : See beam lobe switching.

Local analogue loopback. : An analogue loopback test that forms the loop at the line side (analogue output) of the local modem.

Local attachment. : (in ibm environments) the connection of a peripheral device or control unit directly to a host channel.

Local channel loopback. : A channel loopback test that forms the loop at the output (composite side) of the local multiplexor.

Local Control Mode: When set for a given control point it means that the commands can be issued from this point.

Local dataset. : A signal converter which conditions the digital signal transmitted by a rs-232 interface to ensure reliable transmission over a dc continuous metallic circuit without interfering with adjacent pairs in the same telephone cable. Normally conforms with bell 43401. Also erroneously called baseband modem, limited distance modem, local modem, or short-haul modem; also see line driver.

Local digital loopback. : A digital loopback test that forms the loop at the dte side (digital input) of the local modem.

Local distribution company (LDC): A legal entity engaged primarily in the retail sale and/or delivery of natural gas through a distribution system that includes main lines (that is, pipelines designed to carry large volumes of gas, usually located under roads or other major right-of-ways) and laterals (that is, pipelines of smaller diameter that connect the end user to the mainline). Since the structuring of the gas industry, the sale of gas and/or delivery arrangements may be handled by other agents, such as producers, brokers, and marketers that are referred to as "non-LDC."

Local exchange, local central office. : The exchange or central office in which the subscriber's lines terminate.

local lighting : Lighting for a specific visual task, additional to and controlled separately from the general lighting.

Local line, local loop. : A channel connecting the subscriber's equipment to the line terminating equipment in the central office, usually a metallic circuit (either 2-wire or 4-wire).

Local loop. : A circuit connecting an end instrument to a switching facility or distribution point.

Local Roadway (Lighting): Roadways used primarily for direct access to residential, commercial, industrial or other abutting properties. They do not include roadways carrying through traffic. Long local roadways will generally be divided into short sections by collector roadway

Local Temperature: The temperature of a particular area or locality. It may be referred to any place or are of machine.

Localizer beacon. : In aviation. A directional radio beacon, associated with the instrument landing system, which provides an aircraft, during approach and landing, with an indication of its lateral position relative to the runway in use. Note: when a beacon having a similar function is used as part of the standard beam approach system (sba) it is called an approach beacon.

Location: A coding system that defines the physical placement of materials, usually to a high degree of specificity.

Location Id: The building, floor, and cluster segments of the location string.

Location, damp: A location subject to moderate amount of moisture such as some basements, barns, cold storage, warehouse and the like.

Location, dry: A location not normally subject to dampness or wetness a location classified as dry may be temporarily subject to dampness or wetness, as in case of a building under construction.

Location, wet: A location subject to saturation with water or other liquids.

Lock: A condition in which the parting line of a forging is not all in one plane

Lock Out : Terminology used to describe the process of securing an energy source so that work may be done. This is accomplished by locking out all the energy sources pertaining to the device, tagging out the resources, and trying out the device to make sure that it is de energized and safe for work to be done.

Locked Rotor Amps: Also known as starting inrush, this is the amount of current the motor can be expected to draw under starting conditions when full voltage is applied.

Locking (Turnlock): A device is designated to lock in place when it is rotated in a clockwise direction. The device can then only be removed when turned in a counterclockwise direction.

lockout: A mechanical device which may be set to prevent the operation of a push-button or other device.

Lockseam Test: A test performed on a galvanized product to evaluate the adherence of the zinc to the steel substrate.

locus: The line that can be drawn through adjacent positions satisfying a given criteria.

Log: See ?Extrusion Log?

Log, operator's. : A chronological record of events relating to the operation of a particular circuit.

Log, station. : A chronological record of station events i.e. Entries relating to message handling, equipment difficulties, personnel etc.

Logarithmic receiver. : A special type of receiver having a large dynamic range of automatic gain control which gives considerable protection against receiver saturation by strong jamming or interference signals. Useful against weather, clutter, chaff and spot jamming.

logic circuit: A circuit that behaves according to a set of logic rules.

logic level: State of a voltage variable. States HIGH and LOW correspond to the two usable voltage levels of a digital device.

Logical Address: Digital number that uniquely identifies each device in a system.

logical channel number. : (in packet-switched networks) a number assigned when a virtual call is placed; up to 4095 independent logical channels may exist on a single link.

Logical channel, logical connection. : See virtual circuit.

Logical group, logical group number.: (in packet-switched networks) logical channels are divided into one of 16 logical groups.

Logistics: The science of identifying, maintaining, and transporting materials.

Long: In commodities market parlance, buying more futures contracts than you sell.

Long Belt: An adjustable belt, located on the seventh floor of the boiler house, which carries coal to the desired coal bay.

Long Distribution (Lighting): A luminaire is classified as having a long light distribution when its max candlepower point falls between 3.75MH6.0MH TRL. The maximum luminaire spacing to mounting height ratio is generally 12.0 or less.

Long Haul: having long duration or long time period.

Long lines. : Long lines include all forms of physical conductors used for communication purposes such as open wire systems, underground and overhead cables, and submarine cables, but do not include local circuits. They also may contain radio relay systems when they are integrated with the wire system.

Long Products: Classification of steel products that includes bar, rod and structural products, that are long, rather than flat.

Long Term Evolution (LTE): The GSM/EDGE based wireless technology used for high speed mobile data phone known as the 4G LTE . It is provided into latest 4th generation mobile devices.

Long Terne: A term applying to steel sheets that have been terne coated (Lead and Tin) by immersion in a bath of Terne Metal.

Long ton: A unit that equals 20 long hundred weight or 2,240 pounds. Used mainly in England.

Long Transverse Direction: For plate, sheet and forgings, the direction perpendicular to the longitudinal direction which is also at right angles to the thickness of the product. See also ? Longitudinal Direction?

Longitudinal Wrap: A tape applied longitudinally with the axis of the core being covered, as opposed to a helical, or spiral, tape wrapped core.

Long-term debt: Debt securities or borrowing having a maturity of more than one year.

Long-term purchase: A purchase contract under which at least one delivery of material is

scheduled to occur during the second calendar year after the contract-signing year. Deliveries also can occur during the contract-signing year, during the first calendar year there after, or during any subsequent calendar year.

Long-Term Stability: The stability over a period of one year.

Long-Term Stability: The degree of uniformity of frequency over time, when the frequency is measured under identical environmental conditions, such as supply voltage, load, and temperature.

longwall mining: shears coal from a long straight coal face (up to about 700 feet) by working back and forth across the face under a movable, hydraulic-jack roof-support system. The broken coal is transported by conveyor. Longwall machines can mine coal at the rate of 1,000 tons per shift. Mine locomotive, operating on tracks, is used to haul mine cars containing coal and other material, and to move personnel in specially designed "mantrip" cars. Large locomotives can haul more than 20 tons at a speed of about 10 miles per hour. Most mine locomotives run on electricity provided by a trolley wire; some are battery-powered.

Longwall mining: An automated form of underground coal mining characterized by high recovery and extraction rates, feasible only in relatively flat-lying, thick, and uniform coalbeds. A high-powered cutting machine is passed across the exposed face of coal, shearing away broken coal, which is continuously hauled away by a floor-level conveyor system. Longwall mining extracts all machine-minable coal between the floor and ceiling within a contiguous block of coal, known as a panel, leaving no support pillars within the panel area. Panel dimensions vary over time and with mining conditions but currently average about 900 feet wide (coal face width) and more than 8,000 feet long (the minable extent of the panel, measured in direction of mining). Longwall mining is done under movable roof supports that are advanced as the bed is cut. The roof in the mined-out area is allowed to fall as the mining advances.

Longwall mining machine: system, long sections of coal, up to about 700 feet, are removed and no pillars are left to support the mined-out areas. The working area is protected by a movable, powered roof support system. The caved area (gob) compacts and, after initial subsidence, supports the overlying strata. Longwall mining is used where the coalbed is thick and generally flat, where surface subsidence is acceptable.

Look-through. : A technique whereby the jamming emission is interrupted irregularly for extremely short periods in order to allow monitoring of the victim signal during jamming operations.

Loop Cellar: Area under the line where the strip accumulates for making a weld while the line is running (entry end loop cellar), or for taking a coil off while the line is running (delivery end loop cellar).

loop current: A component of current common to the complete loop.

Loop disconnect. : A signalling system used between a subscriber and the local exchange which transmits the digits of the required telephone number from the calling subscriber to the local exchange by making and breaking the local loop. Now being superseded by mf.

Loop flow: The movement of electric power from generator to load by dividing along multiple parallel paths; it especially refers to power flow along an unintended path that loops away from the most direct geographic path or contract path.

loop or mesh: A closed path of elements in a circuit.

Loop Resistance: The total resistance of a complete electrical circuit.

Loop Resistance: The total resistance of two conductors measured round trip from one end (twisted pair, shield and conductor, etc.).

Loop Section: Area where the strip accumulates in order for the line to run continuously while other sections of the line are stopped to begin and complete the processing of another coil.

Loop Tower: 1) Area at the entry end of #5 Line where the strip accumulates enabling the line to continue running while making a weld. 2) Collecting unit used for storing steel. This enables the Entry or Delivery End of the line to stop without stopping production.

Loopback, loopback test. : Type of diagnostic test in which the transmitted signal is returned to the sending device, after passing through all of or a portion of a data communications link or network; this allows a technician (or a built-in diagnostic circuit) to compare the returned signal with the transmitted signal. This comparison provides the basis for evaluating the operational status of the equipment and the transmission paths through which the signal travelled.

Looper Cars: Strip accumulators that allow for continuous running of the line while welds are made. On #5 Pickler, one looper car, which can accumulate about 900 ft., is located in the basement on No. 1 level (entry end). The second looper car, located on No. 2 level halfway between the basement and the floor level, will also accumulate about 900 ft. There is a total of four loop sections.

Looper Line: See ?Line Looper?

Loose Material: During forging operations, pieces of flash often break loose necessitating cleaning of the dies between forging blows; this is usually accomplished by lubricating the die while air is blown on it. Insufficient cleaning results in pieces of flash becoming imbedded in the surface of the forging. Such forgings are often salvaged by removing the loose pieces and hot re forging to fill out the depressions.

Loose Molding: The molding process utilizing unmounted patterns. Gates and runners are usually cut by hand.

Loose Piece: 1) Core box: part of the core box which remains embedded in the core and is removed after lifting off the core box. 2) Pattern: laterally projecting part of a pattern so attached that it remains in the mold until the body of the pattern is drawn. Back draft is avoided by this means. 3) Permanent mold: part which remains on the casting and is removed after the casting is ejected from the mold.

Loose Wrap: A coil that is not wound tight. Using too little tension when winding causes this condition.

Los - line-of-sight (1). : In communications, a direct propagation path that does not go below the radio horizon.

Los - line-of-sight (2). : Alternative term for point-to-point transmission and reception between two antennae not masked by the earth's surface.

loss angle: Angle of deviation of the current from the ideal current for a dielectric for a sinusoidal input.

loss factor: A factor which defines the loss component of a dielectric.

Loss Factor: The loss factor of an insulating material is equal to the product of its

dissipation and dielectric constant.

loss of load probability LOLP : A measure of the probability that system demand will exceed capacity during a given period; this period is often expressed as the expected number of days per year over a long period, frequently taken as ten consecutive years.

Loss of service (15 minutes): Any loss in service for greater than 15 minutes by an electric utility of firm loads totaling more than 200 MW, or 50 percent of the total load being supplied immediately prior to the incident, whichever is less. However, utilities with a peak load in the prior year of more than 3000 MW are only to report losses of service to firm loads totaling more than 300 MW for greater than 15 minutes. (The DOE shall be notified with service restoration and in any event, within three hours after the beginning of the interruption.)

loss tangent : The loss factor, which also corresponds to the tangent of the loss angle.

losses : The general term applied to energy (kWh) and capacity (kW) lost in the operation of an electric system. Losses occur principally as energy transformations from kWh to waste-heat in electrical conductors and apparatus. This power expended without accomplishing useful work occurs primarily on the transmission and distribution systems.

Lost Foam: A casting process in which a foam pattern is replaced by molten in a flask filled with loose sand to form a casting.

Lost Foam Process: Casting process in which a foam pattern is removed from the cavity by the molten metal being poured.

Lot Number: Identifies groups of coils for a particular customer order to be processed at a certain time; identifies a particular group of coils to load.

Loud hailer : See bull horn/loud hailer.

Louvers: Mechanical devices that control air intake of F.D.and I.D.fans.

Low Batt. Det.: Low battery detector

Low Brass: 80% cu. A copper Zinc alloy containing 20% zinc. Is a light golden color, very ductile, suitable for cupping, drawing, forming, etc. Because of its good strength and corrosion resistance it is used for flexible metal gose, metal bellows, etc.

Low Btu gas: A fuel gas with a heating value between 90 and 200 Btu per cubic foot.

Low Carbon Steel: Steel with less than 0.005% carbon is more ductile (malleable): It is capable of being drawn out or rolled thin for use in automotive body applications. Carbon is removed from the steel bath through vacuum degassing.

Low Coating: A condition that occurs when the coating thickness is less than customer or UL specifications

Low E glass: Low-emission glass reflects up to 90% of long-wave radiation, which is heat, but lets in short-wave radiation, which is light. Windows are glazed with a coating that bonds a microscopic, transparent, metallic substance to the inside surface of the double-pane or triple-pane windows.

Low flow showerheads: Reduce the amount of water flow through the showerhead from 5 to 6 gallons a minute to 3 gallons a minute.

Low flush toilet: A toilet that uses less water than a standard one during flushing, for the purpose of conserving water resources.

Low head: Vertical difference of 100 feet or less in the upstream surface water elevation (headwater) and the downstream surface water elevation (tailwater) at a dam.

Low Income Home Energy Assistance Program (LIHEAP): The purpose of LIHEAP is to

assist eligible households to meet the cost of heating or cooling in residential dwellings. The Federal government provides the funds to the States that administer the program.

Low Line O/P: Low line output

Low Loss Dielectric: An insulating material such as polyethylene, that has a relatively low dielectric loss making it suitable for transmission of radio frequency energy.

Low Noise Cable: A cable configuration specially constructed to eliminate spurious electrical disturbances caused by capacitance changes or self-generated noise induced by either physical abuse or adjacent circuitry.

low noise earth : An earth connection in which the level of conducted or induced interference from external sources does not produce an unacceptable incidence of malfunction in the data processing or similar equipment to which it is connected. The susceptibility in terms of amplitude/frequency characteristics varies depending on the type of equipment.

low pass filter: A filter designed to pass only frequencies from d.c. up to the cut-off frequency.

Low power testing: The period of time between a plant's nuclear generating unit's initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during this period is 5 percent of the unit's thermal rating.

Low Pressure: . A processing unit operating at less than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

Low sulfur diesel (LSD) fuel: Diesel fuel containing more than 15 but less than 500 parts per million (ppm) sulfur.

Low temperature collectors: Metallic or nonmetallic collectors that generally operate at temperatures below 110 degrees Fahrenheit and use pumped liquid or air as the heat transfer medium. They usually contain no glazing and no insulation, and they are often made of plastic or rubber, although some are made of metal.

Low Voltage Fuses: Fuses rated 600 volts and below.

Lowboy: (or Stabilizer Roll) Submerged roll in the pot used to stabilize the strip as it exits the pot before entering the dies.

Low-enriched uranium: Uranium enriched to less than 20% U-235. (That in power reactors is usually 3.5-5.0% U-235.)

Lower Flammable Limit (LFL): The lowest concentration of material that will propagate a flame from an ignition source through a mixture of flammable gas or combustible dust dispersion with a gaseous oxidizer.

low-pressure mercury (vapor) lamp: Mercury vapor lamp, with or without a coating of phosphor, in which during operation the partial pressure of the vapor does not exceed 100 pa.

low-pressure sodium (vapor) lamp : Sodium vapor lamp in which the partial pressure of the vapor during operation does not exceed 5 pa.

Low-pressure sodium lamp: A type of lamp that produces light from sodium gas contained in a bulb operating at a partial pressure of 0.13 to 1.3 Pascal. The yellow light and large size make them applicable to lighting streets and parking lots.

Low-sulfur coal: generally contains 1 percent or less sulfur by weight. For air quality standards, "low sulfur coal" contains 0.6 pounds or less sulfur per million Btu, which is equivalent to 1.2 pounds of sulfur dioxide per million Btu.

LPG: See Liquefied Petroleum Gases.

LPW: Lumens Per Watt

Lrc, longitudinal redundancy check. : An error detection method in which the bcc consists of bits calculated on the basis of odd or even parity for all the characters in the transmission block. The first bit of the lrc is set to produce an odd (or even) number of first bits that set set to 1 the second through eighth bits are set similarly. Also called horizontal parity check.

LRG: See Liquefied Refinery Gases.

LS: Limited service ? pipe not meeting specification, usually rejected at the mill

lsi, large-scale integration. : A term used to describe a multi- function semiconductor device, such as a microprocessor, with a high density (up to 1,000 circuits) of electronic circuitry contained on a single silicon chip. See following table for comparison of circuit density ranges.

LT: Loaded trucks used in price quotation to indicate seller fee for handling

LTC: Long thread and coupling (OCTG casing connection)

LTE (4G LTE): Long Term Evolution

Ltrs, letters shift (1). : A physical shift in a terminal using baudot code that enables the printing of alphabetic characters.

Ltrs, letters shift (2). : The character that causes the shift.

Lube: Slang for "Cable Pulling Lubricant".

Lube: Lubricant. The substances used to reduce the friction between mating parts. It may be liquid or semi liquid.

Lubricants: Substances used to reduce friction between bearing surfaces, or incorporated into other materials used as processing aids in the manufacture of other products, or used as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Lubricants include all grades of lubricating oils, from spindle oil to cylinder oil to those used in greases.

Lubricator: A mechanical device, which is used to inject, drops or mist of oil into an airline for lubrication purposes.

Lug: A term commonly used to describe termination, usually crimped or soldered to the conductor, with provision for screwing down to a terminal.

Lumen: An empirical measure of the quantity of light. It is based upon the spectral sensitivity of the photosensors in the human eye under high (daytime) light levels. Photometrically it is the luminous flux emitted with a solid angle (1 steradian) by a point source having a uniform luminous intensity of 1 candela.

Lumen: Standard unit of measure for light flux or light energy. Lamp light output is measured in Lumens.

Lumen: it measures the rtotal amount of visible light emitted from any light source. it is SI derived unit of luminous flux. symbol is lm.

lumen (lm): SI unit for measuring the flux of light. One lumen is equal to the luminous flux emitted in unit solid angle (steradian) by uniform point source having a luminous intensity of 1 candela.

Lumens Per Watt (LPW): The ratio of light energy output (Lumens) to electrical energy input (Watts).

Lumens Per Watt (LPW): The amount of light produced for each watt of electricity consumed is termed as Lumens per watt

Lumens/Watt (lpw): A measure of the efficacy (efficiency) of lamps. It indicates the amount of light (lumens) emitted by the lamp for each unit of electrical power (Watts) used.

Lumiline Lampholder: A special type of "disc" contact lampholder that only fits tubular incandescent lamps of the "lumiline" type. Commonly used in bathroom fixtures, store display case fixtures, etc.

Luminaire: The accumulation of dirt on luminaires results in a loss of light output on the road. This loss is known as the LDD factor and is determined by estimating the dirt category from the graph below. From the appropriate dirt condition curve and the proper e

luminaire: Apparatus that distributes, filters or transforms the light given by a lamp or lamps and which includes all the items necessary for fixing and protecting these lamps and for connecting them to the supply circuit.

Luminaire Dirt Depreciation (LDD): The multiplier used in luminance calculations to relate the initial luminance provided by clean, new luminaries to the reduced luminance that they will provide due to dirt collection on the luminaries at the time at which it is anticipated that cleaning p

Luminaire Dirt Depreciation Factor (LDD): A complete lighting unit consisting of a light source with a means of distribution (reflector and/or refractor), lamp positioning (socket), lamp protection (housing) and a provision for power connection.

luminaire efficiency: The ratio of total lumen output of a luminaire to the lumen output of the lamps, expressed as a percentage.

Luminance: In a direction and at a point of a real or imaginary surface The quotient of the luminous flux at an element of the surface surrounding the point, and propagated in directions defined by an elementary cone containing the given direction, multiplied by t

Luminance: The density of the luminous flux incident on a surface. It is the quotient of the luminous flux multiplied by the area of the surface when the later is uniformly illuminated.

Luminance: the measure of luminous intensity per unit area of light in light traveling direction. Or the amount of light are passes through which is reflected from the particular area.

luminous efficacy: Quotient of the luminous flux emitted by a source and the power consumed. [Unit lumen per watt, lm/W]

luminous flux: The quantity derived from radiant flux by evaluating the radiation according to its action upon the standard photometric observer. [Unit lumen, lm].

luminous intensity distribution: Distribution of the luminous intensities of a lamp or luminaire in all spatial directions.

Luster: Described as reflective, frosted, shiny or dull

Lux: The SI unit of luminance. One lux is one lumen per square meter.

Lux: The lux is the SI unit of illuminance and luminous emittance. It is the measure of luminous flux per unit area .symbol: lx

lux (lx) : SI unit for measuring the illumination of a surface. One lux is defined as an illumination of one lumen per square meter.

LV: Low Voltage

LV: Low voltage

lv low voltage: - not exceeding 1000 V between conductors and 600 V between conductors and earth.

LW: Radio hookup wire with polyvinyl insulation. With or without nylon jacket, braid, or

shielding braid. 300V

LWR: See Light Water Reactor.

M: Thousand

M: Suffix indicating two or more insulated, twisted conductors under an outer, non-metallic covering.

M B Grade: A term applied to Open Hearth steel wire in the .45/.75 carbon range either hard drawn or oil tempered. Oil tempered wire of M B and W M B types are the most widely used of all spring wires. Oil tempered wire is more suitable to precision forming and casting operations than hard drawn wire, because of close control of tensile strength and superior straightness. . NOTE M B, H B and extra H B designate Basic Open Hearth steels, while W M B, W H B and extra W H B designate Acid Open Hearth Steels. The chemical composition and the mechanical properties are the same for both basic and acid steel.

M Sections : Light footweight beams primarily used in the construction of pre engineered housing. These beams are produced in lighter footweights, usually six to 10 pounds per foot, than traditional structural products.

M.O.V.: Metal Oxide Varistor, primary component of TVSS.

MAC: media access control

MAC address: Media Access Control address is a unique numeric identifier assigned to each device connected to an Ethernet network. It is used for data transmission and security functions.

MAC Address: Media access control address.

Machinability Index: A relative measure of the machinability of an engineering material under specified standard conditions.

Machine Allowance: Stock added to the part to permit machining of the part to final dimensions.

Machine Drawing: An engineering drawing which depicts the final size and shape of the part for its end use.

Machine drive (motors): The direct process end use in which thermal or electric energy is converted into mechanical energy. Motors are found in almost every process in manufacturing. Therefore, when motors are found in equipment that is wholly contained in another end use (such as process cooling and refrigeration), the energy is classified there rather than in machine drive.

Machine Lock Forming: See Lockseam.

Machine Tool: A power driven machine designed to bore, cut, drill or grind metal or other materials

Machinist: A person who is skilled in the operation of machine tools. He must be able to plan his own procedure and have knowledge of heat treating principles.

Macroetch: A testing procedure for conditions such as porosity, inclusions, segregations, carburization, and flow lines from hot working. After applying a suitable etching solution to the polished metal surface, the structure revealed by the action of the reagent can be observed visually.

Macroetch Test: Consists of immersing a carefully prepared section of the steel in hot acid and of examining the etched surface to evaluate the soundness and homogeneity of the product being tested.

Macroetching: Etching of a metal surface with the objective of accentuating gross structural details, for observation by the unaided eye or at magnifications not exceeding ten diameters.

Macrograph: A graphic reproduction of a prepared surface of a specimen at a magnification not exceeding ten diameters. When photographed, the reproduction is known as a photomacrograph (not a macrophotograph).

Macroscopic: Visible either with the naked eye or under low magnification (as great as about ten diameters).

Macrostructure: The structure of a metal as revealed by examination of the etched surface at a magnification not exceeding ten diameters.

Made available (vehicle): A vehicle is considered "Made available" if it is available for delivery to dealers or users, whether or not it was actually delivered to them. To be "Made available", the vehicle must be completed and available for delivery; thus, any conversion to be performed by an original equipment manufacturer (OEM) Vehicle Converter or Aftermarket Vehicle Converter must have been completed.

Magma: Naturally occurring molten rock, generated within the earth and capable of intrusion and extrusion, from which igneous rocks are thought to have been derived through solidification and related processes. It may or may not contain suspended solids (such as crystals and rock fragments) and/or gas phases.

Magnet: An object which produces a magnetic field in the surrounding space.

Magnetic Chuck: A flat, smooth surfaced work holding device which operates by magnetism to hold ferrous metal workpieces for grinding.

Magnetic Coil: An electrical device mounted on the solenoid valves that supply the energy needed to shift the valve.

Magnetic field: The detectable magnetic flux issuing from a magnet or electromagnet.

magnetic field: A region of space that surrounds a moving electrical charge or a magnetic pole, in which the electrical charge or magnetic pole experiences a force that is above the electrostatic ones associated with particles at rest.

Magnetic Field: The region within which a body or current experiences magnetic force.

Magnetic Flux: The rate of flow of magnetic energy across or through a surface (real or imaginary).

magnetic flux : A measure of quantity of magnetism, taking account of the strength and the extent of a magnetic field. [Unit weber]

Magnetic Head Pulley: A head pulley is the lead, or head, pulley used to drive a conveyor belt system. When magnetized, the head pulley can be used as a separator to remove metal pieces from the material being transported on the conveyor system. The metal material clings to the conveyor as it rotates around the head pulley and is either scraped or allowed to fall off the belt on the underside of the conveyor.

magnetic mechanism: The magnetic mechanism uses a solenoid with an iron piece to operate the circuit breaker in the event of an overcurrent.

Magnetic Particle Inspection: A nondestructive method of inspection for determining the existence and extent of possible defects in ferromagnetic materials. Finely divided magnetic particles, applied to the magnetized part, are attracted to and outline the pattern of any magnetic leakage fields created by discontinuities.

Magnetic Particle Testing: A non destructive test method of inspecting areas on or near the

surface of ferromagnetic materials. The metal is magnetized, then iron powder is applied. The powder adheres to lines of flux leakage, revealing surface and near surface discontinuities. Magnetic particle testing is used both raw material acceptance testing and product inspection. Quality levels are usually agreed on in advance by the producer and purchaser.

Magnetic poles: The two points of strongest concentration of magnetic flux around a magnet or electromagnet. By assignment the flux leaves the north pole and returns to the south pole.

Magnetic saturation: The point where an increase in magnetic force produces no further magnetic effect in a magnetic material. The material can have no further increase in flux. Iron, nickel, cobalt, and their alloys are considered to be magnetic materials.

magnetic shield: A piece of magnetic material used to carry the magnetic flux around an object to prevent the object from being affected by the magnetic field.

magnetisation curve: The relationship between the magnetic flux density and the applied magnetic field (or the magnetic flux and the applied mmf) is called the magnetisation curve.

Magnetism: The physical phenomena exhibited by magnets and electric current flow that is represented by lines of force.

magnetism: The property of certain materials to attract iron and other magnetic materials.

Magnetite: The oxide or iron of intermediate valence which has a composition close to the stoichiometric composition Fe_3O_4 .

magneto-hydrodynamics MHD: A method of generating electricity by subjecting the free electrons in a high velocity flame or plasma to a strong magnetic field. The free electron concentration in the flame is increased by the thermal ionisation of added substances of low ionisation potential.

magnetomotive force: The force that sets up a magnetic field within and around an object.

magnetostriction: A change in the dimensions of ferromagnetic substances on magnetisation.

Main Cross-Connect (MC): A cross-connect used with first level backbone, entrance, or equipment cables.

Main Drives: Large gear transmissions that power the finishing mill's pinion drives.

main earthing terminal: The terminal or bar provided for the connection of protective conductors, including equipotential bonding conductors, and conductors for functional earthing, if any, to the means of earthing.

Main Filter: Filter used to clean the hydraulic oil supplied by the main pumps before the oil goes to the system's cylinders.

Main Heat: Heat cycle setting on the welder for the main part of the weld.

Main heating equipment: Equipment primarily used for heating ambient air in the housing unit.

Main heating fuel: The form of energy used most frequently to heat the largest portion of the floorspace of a structure. The energy source designated as the main heating fuel is the source delivered to the site for that purpose, not any subsequent form into which it is transformed on site to deliver the heat energy (e.g., for buildings heated by a steam boiler, the main heating fuel is the main input fuel to the boiler, not the steam or hot water circulated through the building.) Note In commercial buildings, the heating must be to at least 50 degrees Fahrenheit.

Main Oil Pump: A pump that pumps oil to the bearings and the controls of a blower when the blower is up to speed.

Main Protection: The protection system which is normally expected to operate in response to a fault in the protected zone.

Main Pump: The pumps that produce the hydraulic pressure for the A.G.C. and C.V.C. reducing station.

Main Steam Header Valve: A valve located before the throttle valve on the main steam line coming into the turbine.

main switch: The principal (or main) switch in an electrical installation.

Main Trip Valve: Electrically operated valve that stops or allows flow through a line.

Mainframe, mainframe computer. : A large-scale computer (such as those made by ibm, univac, control data, burroughs and others) normally supplied complete with peripherals and software by a single large vendor, often with a closed architecture. Also called host or cpu. Contrast with minicomputer.

Mains: A system of pipes for transporting gas within a distributing gas utility's retail service area to points of connection with consumer service pipes.

Maintained Contact Switch: When the actuator is moved to the ON position, this switch makes and retains the circuit contact until the actuator is moved to the OFF position.

Maintenance expenses: That portion of operating expenses consisting of labor, materials, and other direct and indirect expenses incurred for preserving the operating efficiency and/or physical condition of utility plants used for power production, transmission, and distribution of energy.

maintenance factor: Ratio of the average illuminance on the working plane after a specified period of use of a lighting installation to the average illuminance obtained under the same conditions for a new installation.

Maintenance of boiler plant (expenses): The cost of labor, material, and expenses incurred in the maintenance of a steam plant. Includes furnaces; boilers; coal, ash-handling, and coal-preparation equipment; steam and feed water piping; and boiler apparatus and accessories used in the production of steam, mercury, or other vapor to be used primarily for generating electricity. The point at which an electric steam plant is distinguished from an electric plant is defined as follows

Maintenance of structures (expenses): The cost of labor, materials, and expenses incurred in maintenance of power production structures. Structures include all buildings and facilities to house, support, or safeguard property or persons.

Maintenance supervision and engineering expenses: The cost of labor and expenses incurred in the general supervision and direction of the maintenance of power generation stations. The supervision and engineering included consists of the pay and expenses of superintendents, engineers, clerks, other employees, and consultants engaged in supervising and directing the maintenance of each utility function. Direct supervision and engineering of specific activities, such as fuel handling, boiler room operations, generator operations, etc., are charged to the appropriate accounts.

Major electric utility: A utility that, in the last 3 consecutive calendar years, had sales or transmission services exceeding one of the following (1) 1 million megawatthours of total annual sales; (2) 100 megawatthours of annual sales for resale; (3) 500 megawatthours of annual gross interchange out; or (4) 500 megawatthours of wheeling (deliveries plus losses) for others.

Major energy sources: Fuels or energy sources such as electricity, fuel oil, natural gas, district steam, district hot water, and district chilled water. District chilled water is not included in any totals for the sum of major energy sources or fuels; all other major fuels are included in these totals.

Major fuels: Fuels or energy sources such as electricity, fuel oil, liquefied petroleum gases, natural gas, district steam, district hot water, and district chilled water.

Major interstate pipeline company: A company whose combined sales for resale, including gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Major Roadway (Lighting): That part of the roadway system that serves the principal network for throughtraffic flow. The routes connect areas of principal traffic generation and important rural highways entering the city.

Majority carrier: Current carriers (either free electrons or holes) that are in excess in a specific layer of a semiconductor material (electrons in the n-layer, holes in the p-layer) of a cell.

Make Up: Water that is added to accumulator drum to ensure proper water level.

Make Up Tank: A component of the cooling system that allows additional coolant to be added to the system as needed.

Make-up air: Air brought into a building from outside to replace exhaust air.

malleability: Capacity of being hammered out into thin sheets. Managing the level and shape of demand for electrical energy so that demand conforms to present supply situations and long-run objectives and constraints.

Malleabilizing: A process of annealing white cast iron in such a way that the combined carbon is wholly or partly transformed to graphitic or free carbon or, in some instances, part of the carbon is removed completely.

Malleable Iron: A cast iron made by prolonged annealing of white iron in which decarburization, graphitization or both take place to eliminate some or all of the cementite. The graphite is in the form of temper carbon. If decarburization is the predominant reaction, the product will exhibit a light fracture surface; hence whiteheart malleable. Otherwise, the fracture surface will be dark; hence blackheart malleable. Only the blackheart malleable is produced in the United States. Ferritic malleable has a predominantly ferritic matrix; pearlitic malleable may contain pearlite, spheroidite or tempered martensite, depending on heat treatment and desired hardness.

Man. : Metropolitan area network. A geographically extended high speed lan designed to interconnect users within a city or metropolitan area.

Management information system. : An information system designed to aid in the performance of management functions. Note. This term covers operational and administrative management systems, office automation systems and scientific systems.

Manchester encoding. : A binary signalling mechanism that combines data and clock pulses.

MANE-VU (Mid-Atlantic/Northeast Visibility Union) : An organization formed by the Mid-Atlantic and Northeastern states, tribes, and federal agencies to coordinate planning activities to reduce haze (air pollution) in the region. The organization encourages a coordinated approach to meeting the requirements of EPA's Regional Haze Rules and reducing visibility impairment in major national parks and wilderness areas in the Northeast and Mid-Atlantic

regions.

Manhattan Project: The U.S. Government project that produced the first nuclear weapons during World War II. Started in 1942, the Manhattan Project formally ended in 1946. The Hanford Site, Oak Ridge Reservation, and Los Alamos National Laboratory were created for this effort. The project was named for the Manhattan Engineer District of the U.S. Army Corps of Engineers.

Manholes: A manhole is the opening in the underground duct system which houses cables splices and which cablemen enter to pull in cable and to make splices and tests. Also called a splicing chamber or cable vault.

Manipulation. : The alteration of friendly electromagnetic emission characteristics, patterns or procedures to convey misleading telltale indicators that may be used by hostile forces.

manipulative communication deception. : Regulated insertion of misleading material into our own communications channels for the purpose of presenting a false traffic picture to the enemy.

Manual Control: A control actuated by the operator.

Manual Controller: A horsepower rated switch without overload protection used for the operation of small A.C. or D.C. motors.

Manual dimmer switches: These are like residential-style dimmer switches. They are not generally used with fluorescent and high-intensity discharge (HID) lamps.

Manual Override: A means of manually actuating an automatically controlled device.

Manual Reset: A fluorescent starter that automatically deactivates a failed lamp to eliminate flickering. A reset button is provided on the starter to activate the circuit after lamp replacement.

manual transfer switch: A switch designed so that it will disconnect the load from one power source and reconnect it to another source while at no time allowing both sources to be connected to the load simultaneously.

Manual Welding: Welding where in the entire welding operation is performed and controlled by hand.

Manufactured gas: A gas obtained by destructive distillation of coal or by the thermal decomposition of oil, or by the reaction of steam passing through a bed of heated coal or coke. Examples are coal gases, coke oven gases, producer gas, blast furnace gas, blue (water) gas, carbureted water gas. Btu content varies widely.

Manufacturing: An energy-consuming subsector of the industrial sector that consists of all facilities and equipment engaged in the mechanical, physical, chemical, or electronic transformation of materials, substances, or components into new products. Assembly of component parts of products is included, except for that which is included in construction.

Manufacturing division: One of 10 fields of economic activity defined by the Standard Industrial Classification Manual. The manufacturing division includes all establishments engaged in the mechanical or chemical transformation of materials or substances into new products. The other divisions of the U.S. economy are agriculture, forestry, fishing, hunting, and trapping; mining; construction; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; personal, business, professional, repair, recreation, and other services; and public administration. The establishments in the manufacturing division constitute the universe for the MECS (an EIA

survey).

Manufacturing establishment: An economic unit at a single physical location where mechanical or chemical transformation of materials or substances into new products are performed.

Map, line route/route diagram. : A map or overlay for signal communication operations that shows the actual routes and types of construction of wire circuits in the field.

Map, manufacturing automation protocol. : (in lan technology) a token-passing bus designed for factory environments by general motors; standard ieee 802.4 is nearly identical to

Maraging: A precipitation hardening treatment applied to a special group of high nickel iron base alloys (maraging steels) to precipitate one or more intermetallic compounds in matrix of essentially carbon free martensite.

Maraging Steel: A high alloyed steel that is hardened by both martensite transformation and by age hardening.

MARAMA (Mid-Atlantic Regional Air Management Association, Inc.) : A voluntary, non-profit association of ten Mid-Atlantic state and local air pollution control agencies.

Marginal cost: The change in cost associated with a unit change in quantity supplied or produced.

Marginal cost: The cost of one additional unit within a group of like units.

marginal cost : The sum that has to be paid for the next increment of product of service. The marginal cost of electricity is the price to be paid for kilowatt-hour above and beyond those supplied by presently available generating capacity irrespective of sunk costs.

Marine freight: Freight transported over rivers, canals, the Great Lakes, and domestic ocean waterways.

Marine Heat Exchanger: A heat exchanger is any type of device used to transfer heat from between mediums. Marine heat exchangers are specifically designed to help remove heat from marine engines during operation. Water is pumped from the water in which the boat is operating, requiring an inlet to be below the waterline at all times. The water is circulated through the heat exchanger, helping to dissipate heat from the coolant mix circulating from the marine engine through the tubes of the heat exchanger. When marine heat exchangers are used in salt water, a sacrificial zinc anode must be placed on the heat exchanger to absorb the effects of corrosion due to the salt water.

Mark: Damage in the surface of the product whose name is often described by source.

Mark (1). : (in single-current telegraph communications) represents the closed, currentflowing condition.

Mark (2). : (in data communications) represents a binary 1; the steady-state, non-traffic state for asynchronous transmission.

Mark (3). : The idle condition; contrast with space.

Mark (marking signal). : The signal corresponding to the inactive condition in a teleprinter. Normally mark is the signalling condition, which produces a stop signal (ita no 2).

Marked Ratio: The marked ratio of an instrument transformer is the ratio of the rated primary value to the rated secondary value as stated on the nameplate.

Marker Tape: A tape laid parallel to the conductors under the sheath in a cable, imprinted with the manufacturer's name and the specification to which the cable is made.

Marker Thread: A colored thread laid parallel and adjacent to the strand in an insulated conductor which identifies the manufacturer and sometimes the specification to which the wire is made.

Market clearing price: The price at which supply equals demand for the Day-ahead or hour-ahead markets.

Market price contract: A contract in which the price of uranium is not specifically determined at the time the contract is signed but is based instead on the prevailing market price at the time of delivery. A market price contract may include a floorprice, that is, a lower limit on the eventual settled price. The floorprice and the method of price escalation generally are determined when the contract is signed. The contract may also include a price ceiling or a discount from the agreed-upon market price reference.

Market price settlement (uranium): The price paid for uranium delivery under a market-price contract. The price is commonly (but not always) determined at or sometime before delivery and may be related to a floor price, ceiling price, or discount.

Marketable coke: See Petroleum coke, marketable .

Market-based pricing: Prices of electric power or other forms of energy determined in an open market system of supply and demand under which prices are set solely by agreement as to what buyers will pay and sellers will accept. Such prices could recover less or more than full costs, depending upon what the buyers and sellers see as their relevant opportunities and risks.

market-based-price : A price set by the mutual decisions of many buyers and sellers in a competitive market.

Marketed energy: An energy source that is commercially traded. Typically, this energy is sold by a producer, such as a petroleum refiner, through a transmission and distribution network (e.g., pipelines and trucks) to an end-use consumer (e.g., gasoline sold at the pump).

Marketed production: Gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations. Includes all quantities of gas used in field and processing plant operations.

Martempering: A hardening treatment of a steel involving a slow cool through the martensitic transformation range to reduce stresses associated with the quenching of austenite. An important aspect of martempering is that no transformation product other than martensite should form.

Martensite: A distinctive needle like structure existing in steel as a transition stage in the transformation of austenite. It is the hardest constituent of steel of eutectoid composition. It is produced by rapid cooling from quenching temperature and is the chief constituent of hardened carbon tool steels. Martensite is magnetic.

Martensitic Hardening: Martensitic stainless steels can be hardened by heating above the transformation range to temperatures of 1700 to 1950 degrees F., followed by cooling in air or oil. This process provides the maximum toughness.

Martensitic Stainless Steels: A corrosion resistant ferrous alloy with a predominant martensitic phase. Mass Effect . . . The effect that the mass of a component has on the properties of the material from which the part is made. In castings, such effects may arise due to the effect of mass on the solidification rate and on the rate of temperature change during heat treatment.

Maskings. : The use of additional transmitters to hide a particular electromagnetic radiation as to location of source and/or purpose of the radiation.

Masonry: A general term covering wall construction using masonry materials such as brick, concrete block, stone, and tile that are set in mortar; also included is stucco. The category does not include concrete panels because concrete panels represent a different method of constructing buildings. Concrete panels are reported separately.

Masonry stove: A type of heating appliance similar to a fireplace, but much more efficient and clean burning. They are made of masonry and have long channels through which combustion gases give up their heat to the heavy mass of the stove, which releases the heat slowly into a room. Often called Russian or Finnish fireplaces.

Mass burn facility: A type of municipal solid waste (MSW) incineration facility in which MSW is burned with only minor presorting to remove oversize, hazardous, or explosive materials.

Master Pattern: The object from which a die can be made; generally a metal model of the part to be cast with process shrinkage.

Master station (1). : (in multipoint circuits) the unit, which controls/polls the nodes.

Master station (2). : (in point-to-point circuits) the unit, which controls the slave station.

Master station (3). : (in lan technology) the unit on a token-passing ring that allows recovery from error conditions, such as lost, busy or duplicate tokens; a monitor station.

Master Switch: A switch which serves to dominate the operation of contactors, relays and auxiliary devices of an electric controller.

Master-metering: Measurement of electricity or natural gas consumption of several tenants or housing units using a single meter. That is, one meter measures the energy usage for several households collectively.

Metalloid: (a) Element intermediate in luster and conductivity between the true metals and non metals. Arsenic, antimony, boron, tellurium, and selenium, etc., are generally considered metalloids; frequently one allotropic modification of an element will be non metallic, another metalloid in character. Obviously, no hard and fast line can be drawn. (b) In steel metallurgy, metalloid has a specialized, even if erroneous, meaning; it covers elements commonly present in simple steel; carbon, manganese, phosphorus, silicon and sulfur.

matching transformer: A device used to convert impedance between two levels. A common use is between a 75 ohm impedance and a 300 ohm impedance.

Matchplate: A plate of metal or other materials on which patterns and gating systems, split along the parting line, are mounted back to back to form an integral piece.

Material Processing: Material processing is the process by which raw materials are refined, combined, or treated in order to achieve new material properties or to create a component. For example, the term material processing can be used in reference to the production of stainless steel and other alloys.

Material Safety Data Sheets: (MSDS) Sheets that document safety issues associated with various materials used.

Matt Finish: A dull or grit surface appearance achieved by rolling on rolls which have been roughened by mechanical, chemical, or electrical means to various degrees of surface texture.

Matte Surface: A dull surface appearance on a tin plate product; non reflowed tinplate. See Re flowed Surface.

Max Coil: Largest size coil a customer will take; Tin Mill may have to split a coil to achieve this weight.

Maximum deliverability: The maximum rate natural gas can be withdrawn from or injected into a storage field when filled to maximum capacity.

Maximum demand: The greatest of all demands of the load that has occurred within a specified period of time.

maximum demand: The largest of all demands of the load (usually expressed in kVA or MVA) that has occurred within a specified period of time.

Maximum dependable capacity, net: The gross electrical output measured at the output terminals of the turbine generator(s) during the most restrictive seasonal conditions, less the station service load.

Maximum established site capacity (reactors): The maximum established spent fuel capacity for the site is defined by DOE as the maximum number of intact assemblies that will be able to be stored at some point in the future (between the reporting date and the reactor's end of life) taking into account any established or current studies or engineering evaluations at the time of submittal for licensing approval from the NRC.

Maximum generator nameplate capacity: The maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer.

Maximum hourly load: This is determined by the interval in which the 60-minute integrated demand is the greatest.

Maximum Load: The most current that can flow through a device continually, without damaging the device.

Maximum Permissible Values of the input current and voltage: Values of current and voltage assigned by the manufacturer which the transducer will withstand indefinitely without damage.

Maximum power point (MPP): The point on the current-voltage (I-V) curve of a module under illumination, where the product of current and voltage is maximum. [UL 1703] For a typical silicon cell, this is at about 0.45 V.

Maximum power point tracker (MPPT): Means of a power conditioning unit that automatically operates the Photovoltaic-generator at its MPP under all conditions.

Maximum streamflow: The maximum rate of water flow past a given point during a specified period.

Maximum Stress: In testing of the strength of steel a sample is machined into a standard test piece and is stretched in a tensile testing machine until it breaks. The results are expressed in N/mm² and is the value of the maximum load reached in the test divided by the original cross sectional area of the specimen.

maxwell Mx: An old unit of magnetic flux. 1 Mx = 10⁻⁸ Wb

MBOED: million barrels of oil equivalent per day

Mbps: Megabits per second. A megabit is roughly a million bits of data. This abbreviation is used to describe data transmission speeds, such as the rate at which information travels over the internet.

Mbps (MegaBits Per Second): One million bits per second.

Mbps. : Millions of bits per second (bps).

MC: Denotes cable with interlocking metal tape or corrugated tube enclosure.

mcb: [see miniature circuit breaker]

MCC: Motor Control Center

MCCB: Molded Case Circuit Breaker

mccb: [see moulded case circuit breaker]

Mcf: one thousand cubic feet

Mckay Leveler: A series of four rolls (two top, two bottom) necessary to level or remove coil set in order to feed coil ends through the shear.

MCM: Thousand circular mils; e.g. 500 MCM is 500,000 circular mils.

Mcquaid Ehn Grain Size Test: A method of assessing grain size. It consists of a test piece at 927°C for 8 hours by slow cooling and subsequent microscopical examination. The grain size is measured at x100 magnification and compared to standard charts, the figures range from No.1 very coarse to No. 8 very fine.

Meaconing. : A system of receiving beacon signals and rebroadcasting them on the same frequency to confuse navigation. The meaconing stations cause inaccurate bearings to be obtained by aircraft or ground stations.

Metallographic Structure: The nature, distribution, and amounts of the metallographic constituents in a metal.

Mean Diameter: The average of two measurements of the diameter at right angles to each other

Mean indoor temperature: The "usual" temperature. If different sections of the house are kept at different temperatures, the reported temperature is for the section where the people are. A thermostat setting is accepted if the temperature is not known.

Mean operating hours: The arithmetic average number of operating hours per building is the weighted sum of the number of operating hours divided by the weighted sum of the number of buildings.

Mean power output (of a wind turbine): The average power output of a wind energy conversion system at a given mean wind speed based on a Raleigh frequency distribution.

Mean square feet per building: The arithmetic average square feet per building is the weighted sum of the total square feet divided by the weighted sum of the number of buildings.

mean time between failure: A statistical estimate of the time a component, subassembly, or operating unit will operate before failure will occur.

Mean-Sensing Transducer: A transducer which measures the mean or average value of the input waveform but which is adjusted to give an output corresponding to the r.m.s. value of the input when that input is sinusoidal.

Measured: A quantity subjected to measurement.

Measured heated area of residence: The floor area of the housing unit that is enclosed from the weather and heated. Basements are included whether or not they contain finished space. Garages are included if they have a wall in common with the house. Attics that have finished space and attics that have some heated space are included. Crawl spaces are not included even if they are enclosed from the weather. Sheds and other buildings that are not attached to the house are not included. "Measured" area means the measurement of the dimensions of the home, using a metallic, retractable, 50-foot tape measure. "Heated area" is that portion of the measured area that is heated during most of the season. Rooms that are shut off during the

heating season to save on fuel are not counted. Attached garages that are unheated and unheated areas in the attics and basements are also not counted.

Measured reserves: See Proved energy reserves.

Measured resources, coal: Coal resources for which estimates of the rank, quality, and quantity have been computed, within a margin of error of less than 20 percent, from sample analyses and measurements from closely spaced and geologically well known sample sites. Measured resources are computed from dimensions revealed in outcrops, trenches, mine workings, and drill holes. The points of observation and measurement are so closely spaced and the thickness and extent of coals are so well defined that the tonnage is judged to be accurate within 20 percent. Although the spacing of the points of observation necessary to demonstrate continuity of the coal differs from region to region, according to the character of the coalbeds, the point of observation are no greater than 1/2 mile apart. Measured coal is projected to extend as a belt 1/4 mile wide from the outcrop or points of observation or measurement.

Measuring Element: A unit or module of a transducer which converts the measurand, or part of the measurand into a corresponding signal.

Measuring Range: The part of the span where the performance complies with the accuracy requirements.

Measuring Range: It is the space or region under which sensor can measure or work with accuracy.

Measuring Relay: An electrical relay intended to switch when its characteristics quantity, under specified conditions and with a specified accuracy attains its operating value.

Measuring Table: A precise measuring device.

mebi (Mi): Binary multiple prefix corresponding to megabinary or 220 or (210)² or 10242. [IEC 1998]

MEC: Micro Energy Cell

Mechanical Assembly: Mechanical assembly is a production and assembly service offered in many different industries. The assembly company may offer services including fabrication, assembly, packaging and distribution. The service may be offered on individual components or on complete systems. For example, one company may offer the production and assembly of a computer hard drive, while another provider may receive all of the individual components and provide the assembly of the entire computer system.

Mechanical Control: A control actuated by linkages, gears, screws, cams or other mechanical elements.

Mechanical Level Indicator: Device that uses a float to measure the level of oil in a tank.

Mechanical Platform Scales: Mechanical platform scales are weight measurement devices, often designed to be portable and sit on the floor in industrial, commercial, or shipping and receiving facilities. A mechanical scale makes use of a leveling beam or a dial to report the weight of an object. Floor scales may be designed for small package size application or for much larger-scale measurement needs.

Mechanical Polishing: A method of producing a specularly reflecting surface by use of abrasives.

Mechanical Properties: Properties of a material that reveal its strength and elastic behavior.

Mechanical Spring: Any spring produced by cold forming from any material with or without

subsequent heat treatment.

Mechanical Testing: Mechanical testing is a term that covers a broad range of engineering services. Mechanical testing may include the analysis of material properties and the analysis of component characteristics such as stress, strain, failure and fatigue.

Mechanical Tubing: Steel tubing products used in the manufacture of hydraulic cylinders, in mechanical parts for autos and trucks, construction and farm equipment and in furniture, bicycles and many other applications.

Mechanical Twin: A twin formed in a metal during plastic deformation by simple shear of the structure.

Mechanical Working: Plastic deformation or other physical change to which metal is subjected, by rolling, hammering, drawing, etc. to change its shape, properties or structure.

MECS: Manufacturing Energy Consumption Survey

Media Access Control (MAC): Networking layer that determines which node can access the physical media.

Media Independent Interface: It is used to connect a 100 Mbit/s Ethernet media access control (MAC) block to a PHY chip

Median: The middle number of a data set when the measurements are arranged in ascending (or descending) order.

Median streamflow: The middle rate of flow of water past a given point for which there have been several greater and lesser rates of flow occurring during a specified period.

Median water condition: The middle precipitation and run-off condition for a distribution of water conditions that have happened over a long period of time. Usually determined by examining the water supply record of the period in question.

medical electrical equipment: Electrical equipment, provided with no more than one connection to a particular supply mains, and intended to diagnose, treat or monitor the patient under medical supervision and which makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient. The equipment includes those accessories as defined by the manufacturer which are necessary to enable the normal use of the equipment.

Medium Base Lampholder (Edison): The most common type of screw-in lampholder found in everyday lighting fixtures, table lamps, and accepting incandescent bulbs with screw bases approximately 1" in diameter.

Medium Carbon Steel: Contains from 0.30% to 0.60% carbon and less than 1.00% manganese. May be made by any of the standard processes. See Low Carbon Steel and High Carbon Steel

Medium Distribution (Lighting): A luminaire is classified as having a medium light distribution when its max candlepower point falls between 2.25MH3.75MH TRL. The maximum luminaire spacing to mounting height ratio is generally 7.5 or less.

Medium grade messaging. : A mgm service is the mechanism for exchanging important information between individuals throughout defence and its partners, in a manner optimised to meet assurance of delivery and security. It is differentiated from hgm by its emphasis on the originator accepting responsibility for ensuring delivery having been achieved. (cceb/nato)

Medium pressure: For valves and fittings, implies that they are suitable for working pressures between 125 to 175 pounds per square inch.

Medium Voltage: An electrical system or cable designed to operate between 1kv and 38kv.

Medium Voltage: it can be defined as the voltage greater than 1 kV and less than 100 kV

Medium Voltage Fuses: Fuses rated from 601 volts to 34,500 volts.

medium. : Any material substance that can be used for the propagation of signals in the form of electrons, modulated radio, light or acoustic waves from one point to another such as optical fibre, cable, wire, air or free space.

Medium-temperature collector: A collector designed to operate in the temperature range of 140 degrees to 180 degrees Fahrenheit, but that can also operate at a temperature as low as 110 degrees Fahrenheit. The collector typically consists of a metal frame, metal absorption panels with integral flow channels (attached tubing for liquid collectors or integral ducting for air collectors), and glazing and insulation on the sides and back.

Medium-volatile bituminous coal: See Bituminous coal.

Meehanite: A trade name applied to a certain type of cast iron.

Mega (M): Prefix for units of measurement equal to millions (1,000,000 or 10^6).

mega (M): Decimal multiple prefix corresponding to a million or 10^6 .

MegaBaud: one million baud

Megacycle: One million cycles.

Megaohm: A unit of electrical resistance equal to one million ohms.

Megaohm: One million ohms.

Megaohmmeter: An instrument for measuring extremely high resistance.

Megavolt: One million volts.

Megavoltamperes (MVA): Millions of voltamperes, which are a measure of apparent power. (See definition for apparent power.)

Megawatt: One million watts.

Megawatt (MW): One million watts of electricity.

Megawatt (MW): A unit of power, = 10^6 watts. MWe refers to electric output from a generator, MWt to thermal output from a reactor or heat source (e.g., the gross heat output of a reactor itself, typically three times the MWe figure).

Megawatt electric (MWe): One million watts of electric capacity.

megawatt : One million watts.

Megawatthour (MWh): One thousand kilowatt-hours or 1million watt-hours.

megawatt-hour MWh : One thousand kilowatt-hours or one million-watt hours.

Megger: A test instrument for measuring the insulation resistance of conductors and other electrical equipment; specifically, a megaohm (million ohms) meter; this is a registered trade mark of the James Biddle Co.

megger or megohmmeter: A high resistance range specially designed ohmmeter for measuring insulation resistance of conductors and other electrical equipment.

Megohmmeter: A testing device that applies a DC voltage and measures the resistance (in millions of ohms) offered by conductor's or equipment insulation.

Megohmmeter: it is a type of ohmmeter which is used to measure the electrical resistance of insulator. It is used to test the insulators for any current leakage and insulations.

Melt Extrude: To heat a material above its crystalline melt point and extrude it through an orifice.

Melt Time: The time needed for a fuse element to melt, thereby initiating operation of the

fuse. Also known as Fuse Melt Time.

Melt Time: time period required to melt any material. Or the between the material, transformation from solid to liquid.

Melting Point: The temperature at which a pure metal, compound or eutectic changes form solid to liquid; the temperature at which the liquid and the solid are in equilibrium.

melting point: The constant temperature at which the solid and liquid phase of a substance are in equilibrium at a given pressure.

Melting Range: The range of temperature in which an alloy melt; that is the range between solidus and liquidus temperatures.

Melting Time: The amount of time required to melt the fuse link during a specified overcurrent.

Memory: The part of a computing device where data and instructions are stored.

Mercaptan: An organic chemical compound that has a sulfur like odor that is added to natural gas before distribution to the consumer, to give it a distinct, unpleasant odor (smells like rotten eggs). This serves as a safety device by allowing it to be detected in the atmosphere, in cases where leaks occur.

Merchant Bar: A group of commodity steel shapes that consist of rounds, squares, flats, strips, angles, and channels, which fabricators, steel service centers and manufacturers cut, bend and shape into products. Merchant products require more specialized processing than reinforcing bar.

Merchant coke plant: A coke plant where coke is produced primarily for sale on the commercial (open) market.

Merchant facilities: High-risk, high-profit facilities that operate, at least partially, at the whims of the market, as opposed to those facilities that are constructed with close cooperation of municipalities and have significant amounts of waste supply guaranteed.

Merchant MTBE plants: MTBE (methyl tertiary butylether) production facilities primarily located within petrochemical plants rather than refineries. Production from these units is sold under contract or on the spot market to refiners or other gasoline blenders.

Merchant oxygenate plants: Oxygenate production facilities that are not associated with a petroleum refinery. Production from these facilities is sold under contract or on the spot market to refiners or other gasoline blenders.

Mercury vapor lamp: A high-intensity discharge lamp that uses mercury as the primary light-producing element. Includes clear, phosphor coated, and self-ballasted lamps.

Mercury Vapor Lamp (MV): An HID light source in which the arc tube's primary internal element is Mercury Vapor.

mercury vapour lamp: Lamp emitting a strong bluish-white light by the passage of an electric current through mercury vapour in a bulb.

Merger: A combining of companies or corporations into one, often by issuing stock of the controlling corporation to replace the greater part of that of the other.

Mesh: To engage, as the teeth between two gears.

mesh: (see loop)

Mesh: The tubular open braid portion of a wire mesh grip

mesh analysis : A method of analysis of circuits based on defining mesh currents as the variables.

Mesh Termination: The method of securing woven strands at the ends of a wire mesh grip.

Message (1). : All of the information that is sent from an originator to a recipient, including header information, content, any attachments and the envelope information. (uk)

Message (2). : A complete transmission; used as a synonym for packet, but a message is often made up of several packets.

Message (3). : Any thought or idea expressed briefly in plain or secret language, prepared in a form suitable for transmission by any means of communication.

Message (4). : The document containing the information to be transmitted and any reproduction thereof made in the course of transmission or delivery to the addressee. Also known as signal.

Message attachments. : Data corresponding to an accepted pre-defined format (file extension), which is carried within a message. (uk)

Message centre. : An agency charged with the responsibility for acceptance, preparation for transmission, receipt and delivery of messages.

Message envelope. : The part of the message carrying the necessary data for the system to route the message efficiently and securely. This data could include; an address, precedence and security labels. (uk)

Message header. : The part of a message that contains the protective marking, precedence, the criticality and the subject of the message. In addition, it includes the addressees to whom the message is to be sent. (uk)

Message heading. : The part of a message containing all components preceding the text.

Message identification. : A combination of letters and figures used to identify a message between communication centres. It will normally consist of the following components in sequence taken from format line 3: B. The station serial number. C. The julian filing time. E.g. Ruebarb 0123 2571215

Message switching. : A message communications technique in which a complete message is stored and then forwarded to one or more destinations when the destination(s) are free to receive traffic. Frequently used in conjunction with telex to automate large telex installations.

message text handling. : Manual or automated administrative actions carried out on a message text such as identification, distribution, storage and retrieval.

Message, book. : A book message is one, which is destined for two or more addressees and is of such nature that the originator considers that no addressees need to be informed on any other addressees. Each addressee must be indicated as action or information.

Message, drill. : Message intended for training communications personnel.

Message, drop. : See drop message.

Message, exercise. : Message sent during and relating to training exercises, command post exercises, tactical exercise and manoeuvres.

Message, general. : Messages which have a wide standard distribution are termed general messages. They are assigned an identifying title and usually a sequential serial number.

Message, misrouted. : A message bearing an incorrect routing instruction.

Message, missent. : A message, which bears the correct routing instruction but has been transmitted to a station other than that indicated.

Message, multiple address. : A multiple address message is one, which is destined for two or more addressees each of whom is informed of all addressees. Each addressee must be

indicated as action or information.

Message, procedure. : See procedure message.

Message, service. : A brief, concise message between operating or supervisory personnel at communication/signal centres or relay stations pertaining to any phase of traffic handling, status of communication facilities, circuit conditions or other matters affecting communication operation.

Message, single address. : A single address message is one destined for only one addressee.

Messaging grades. : See very high grade messaging, high grade messaging, medium grade messaging, basic grade messaging and public grade messaging.

Messaging system. : Any system used for the electronic exchange of either organizational or individual messages.

Messenger: A bare wire used to support power or communications cables suspended overhead.

Messenger: Messenger is the system to send and receive the some text information from one IP to other IP.

Messenger: A bare cable used for its strength characteristics to support power conductors and insulated power cables. A messenger can be used as a conductor, partial conductor, or non-conductor.

Met: An approximate unit of heat produced by a resting person, equal to about 18.5 Btu per square foot per hour.

Meta-anthracite: See Anthracite.

Metal: An opaque, lustrous, elemental substance that is a good conductor of heat and electricity and, when polished, a good reflector of light. Most metals are malleable and ductile and are, in general, denser than other substances.

Metal Clad (Switchgear): An expression used by some manufactures to describe a category of medium voltage switchgear equipment where the circuit breakers are all enclosed in grounded, sheetsteel enclosures. Such enclosures may be suitable for indoor use or may be enclosed in an

Metal Enclosed (Switchgear): An expression used by some manufacturers to describe a category of low voltage, 600 volt class switchgear equipment, where the circuit breakers are all enclosed in grounded, sheetsteel enclosures. Such enclosures normally are suitable only for indoor use

Metal fuels: Natural uranium metal as used in a gas-cooled reactor.

Metal halide lamp: A high-intensity discharge lamp type that uses mercury and several halide additives as light-producing elements. These lights have the best Color Rendition Index (CRI) of the high-intensity discharge lamps. They can be used for commercial interior lighting or for stadium lights.

metal halide lamp: Discharge lamp in which the major portion of the light is produced by the radiation from a mixture of a metallic vapor (for example, mercury) and the products of the dissociation of halides (for example, halides of thallium, indium or sodium).

Metal Halide Lamp (MH): An HID light source in which the arc tube's primary internal element is Mercury Vapor in combination with Halides (salts or iodides) of other metals such as Sodium or Scandium.

Metal oxide field-effect transistor (MOSFET): Also called insulated gate field effect

transistor (IGFET). A transistor type that uses an electric field to control conduction.

metal oxide semiconductor FET : [see MOSFET]

metal oxide varistor: [see MOV]

Metal Oxide Varistor: it is the component like a diode having current and voltage characteristics which is used to protect electrical devices from high transient voltages and sudden surge.

Metal Spraying: A process for applying a coating of metal to an object. The metal, usually in the form of wire, is melted by an oxyhydrogen or oxyacetylene blast or by an electric arc and is projected at high speed by gas pressure against the object being coated.

metal vapor lamp: Discharge lamp such as the 'mercury (vapor) lamp' and the 'sodium (vapor) lamp' in which the light is mainly produced in a metallic vapor.

Metal-clad Switchgear: An outdoor metal-clad switchgear is a weatherproof housing for circuit breakers, protective relays, meters, current transformers, potential transformers, bus conductors, and other equipment. An indoor switchgear must be protected from the environment and contains the same types of equipment as the outdoor type.

Metallic: The metallic material composition of the collector's absorber system.

Metallography: The science concerning the constituents and structure of metals and alloys as revealed by the microscope.

Metalloid: 1) An element intermediate between metals and nonmetals possessing both metallic and nonmetallic properties, as arsenic, 2) sometimes applied to elements commonly bonded in small amounts in steel, as carbon, manganese, boron, silicon, sulfur, and phosphorus.

Metallstatic Pressure: A compound phase referring to hydrostatic pressure, substituting Metall since Hydro connotes water.

Metallurgical Bond: The bond between two metals whose interface is free of voids, oxide films, or discontinuities.

Metallurgical coal: Coking coal and pulverized coal consumed in making steel.

Metallurgical coal (or coking coal): meets the requirements for making coke. It must have a low ash and sulfur content and form a coke that is capable of supporting the charge of iron ore and limestone in a blast furnace. A blend of two or more bituminous coals is usually required to make coke.

Metallurgy: The science and technology of metals, a broad field that includes but is not limited to the study of internal structures and properties of metals and the effects on them of various processing methods.

Metallurgy Testing: See Engineer Services : Metallurgical

Metallock: A method of cold repair of castings and forgings.

Metalograph: An optical instrument designed for both visual observation and photomicrography of prepared surfaces of opaque materials at magnifications ranging from about 25 to about 1500 diameters.

Metals Comparator: An instrument for testing or identifying metallic and nonmetallic parts. Parts are placed in an electromagnetic field and a standard parts in a matched electromagnetic field. Distortions of the magnetic fields are compared on an oscilloscope.

Metamic: A metal ceramic high in Cr Al₂O₃.

Metastable: Possessing a state of pseudo equilibrium that has a free energy higher than that

of the true equilibrium state but from which a system does not change spontaneously.

Meter: To regulate the amount or rate of fluid flow.

meter (m): The meter is the SI unit of length. It is a fundamental unit. It is defined as the length of the path travelled by light in vacuum during a time interval of $1/299\,792\,458$ of a second [1983]

Meter In: To regulate the amount of fluid flow into an actuator or system.

Meter Out: To regulate the flow of the discharge fluid out of an actuator or system.

Metered data: End-use data obtained through the direct measurement of the total energy consumed for specific uses within the individual household. Individual appliances can be submetered by connecting the recording meters directly to individual appliances.

Metered peak demand: The presence of a device to measure the maximum rate of electricity consumption per unit of time. This device allows electric utility companies to bill their customers for maximum consumption, as well as for total consumption.

metering: Monitoring of energy or water consumption or other data over a period of time.

Metering (non-tariff): Values computed depending on the values of digital or analog inputs during variable periods.

Metering (tariff): Energy values computed from digital and/or analog inputs during variable periods and dedicated to energy measurement for billing purposes.

Metering mode: it is a mode in camera devices to choose spot or multizone metering mode.

Meters: They are measuring devices and can be an indicating meter or a recording meter. An indicating meter shows on a dial the quantity being measured. A recording meter makes a permanent record of the quantity being measured, usually by tracing a line on a chart or graph.

Methane (CH₄): A colorless, flammable, odorless hydrocarbon gas which is the major component of natural gas. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas. See also Greenhouse gases.

Methanogens: Bacteria that synthesize methane, requiring completely anaerobic conditions for growth.

Methanol (CH₃OH): A light, volatile alcohol eligible for gasoline blending.

Methanol blend: Mixtures containing 85 percent or more (or such other percentage, but not less than 70 percent) by volume of methanol with gasoline. Pure methanol is considered an "other alternative fuel."

Methanotrophs: Bacteria that use methane as food and oxidize it into carbon dioxide.

Method of Detection: Sensing technique used by the photoelectric sensor. Three types Thru-Beam, Retroreflective, or Diffuse Reflective.

Methyl chloroform (trichloroethane): An industrial chemical (CH₃CCl₃) used as a solvent, aerosol propellant, and pesticide and for metal degreasing.

Methylene chloride: A colorless liquid, nonexplosive and practically nonflammable. Used as a refrigerant in centrifugal compressors, a solvent for organic materials, and a component in nonflammable paint removers.

Metric conversion factors (for floorspace): Floorspace estimates may be converted to metric units by using the relationship, 1 square foot is approximately equal to .0929 square meters. Energy estimates may be converted to metric units by using the relationship, 1 Btu is approximately equal to 1,055 joules. One kilowatt-hour is exactly 3,600,000 joules. One

gigajoule is approximately 278 kilowatt-hours (kWh).

metric prefixes. : A series of terms and their associated abbreviations used in the metric system to indicate multiples or portions of quantities, which can be expressed as positive or negative power of 10.

Metric ton (mt): A unit of weight equal to 2,204.6 pounds.

Metropolitan: Located within the boundaries of a metropolitan area.

Metropolitan area: A geographic area that is a metropolitan statistical area or a consolidated metropolitan statistical area as defined by the U.S. Office of Management and Budget.

Metropolitan statistical area (MSA): A county or group of contiguous counties (towns and cities in New England) that has (1) at least one city with 50,000 or more inhabitants; or (2) an urbanized area of 50,000 inhabitants and a total population of 100,000 or more inhabitants (75,000 in New England). These areas are defined by the U.S. Office of Management and Budget. The contiguous counties or other jurisdictions to be included in an MSA are those that, according to certain criteria, are essentially metropolitan in character and are socially and economically integrated with the central city or urbanized area.

Mexico Bay Sand: A sand similar to Michigan City dune sand mined at Selkirk Beach, near Mexico NY., on Lake Ontario. It has a silica content of 90% and over.

Meyer Hardness Test: A test to determine tendency of a metal to harden when deformed plastically. A series of indentations are made in the metal using a fixed diameter ball and progressively increasing loads.

Mf: The temperature at which martensite formation finishes during cooling.

Mf Temperature: The temperature at which martensitic transformation is essentially complete during cooling after austenitization.

Mf. : See multiple frequency signalling.

MFT: Abbreviation for 1000 feet.

Mg: Chemical symbol for Magnesium

MHD: Medium hard drawn.

Mho: An electrical unit of conductivity, being the conductivity of a body with resistance of one ohm.

MHR (Lighting): Mounting Height Ratio

Mhs, message handling system. : A general term for the application layer standards being defined by x.400.

MI: One or more conductors insulated with highly compressed refractory minerals and enclosed in a liquid-tight and gas-tight metallic tube sheathing.

Mica Schist: A type of micaceous refractory rock used for lining cupolas and other melting furnaces.

Mica Strainer: A skim core made of thin mineral silicates crystallizing in monoclinic form.

Michigan Sand: Core sands of dune or lake sand and bank sands found in Michigan.

Micro: one millionth of a unit (e.g., microsievert is 10^{-6} Sv).

Micro-: Onemillionth

micro (m): Decimal sub-multiple prefix corresponding to one-millionth or 10^{-6} .

Micro (u): Prefix for units of measurement equal to millionths ($1/1,000,000$ or 10^{-6}).

Micro Energy Cell: Micro Energy Cell (MEC) are small rechargeable very long life energy storage device used in energy harvesting applications.

Micro Fuses: Term describing the smallest sizes of fuses, usually mounted on, or used to protect, printed circuit boards or small electronic components.

Micro Laser Welding: Micro Laser Welding is a metal joining process that uses a laser to precisely apply the thermal energy necessary for joining. The term micro refers to the use of small spot sizes less than 1 mm in diameter. Laser welding has several advantages over arc welding: It limits the heat-affected zone and can be used to produce narrow, deep welds.

Micro Limit Switch: A micro limit switch is a small mechanical device used to turn on or off another device. A micro limit switch is operated by very small movements of an actuator, responding to the movement of other components in a system.

Micro Pipes : Tiny cavities, a fraction of a millimeter in diameter, with irregular outlines, which occur in castings. Etching shows they occur at intersections of convergent dendritic directions.

Micro Tester: A low load hardness tester, suitable for both Vickers and Knoop tests, working with loads of between 10 to 3000 grams.

Microcomputer (1). : A desktop (or laptop) computer; as personal computer.

Microcomputer (2). : A microprocessor system.

Microcrystalline wax: Wax extracted from certain petroleum residues having a finer and less apparent crystalline structure than paraffin wax and having the following physical characteristics penetration at 77 degrees Fahrenheit (D1321)-60 maximum; viscosity at 210 degrees Fahrenheit in Saybolt Universal Seconds (SUS); (D88)-60 SUS (10.22 centistokes) minimum to 150 SUS (31.8 centistokes) maximum; oil content (D721)-5 percent minimum.

Microetching: Etching of metal samples for examination under the microscope.

Microfarad: One millionth of a farad.

Microformer: A type of extensometer for measuring elongation of test piece in a tensile test.

Micrograph: A graphic reproduction of the prepared surface of a specimen at a magnification greater than ten diameters. When photographed, the reproduction is known as a photomicrograph (not a microphotograph).

Microgroove: A small groove scribed into the surface of a solar photovoltaic cell which is filled with metal for contacts.

Microgroove: A small groove scribed into the surface of a cell which is filled with metal for contacts.

Microhardness: The hardness of microconstituents of a material.

Microhenry: One millionth of a henry.

Microinch: 0.000001 (1/1,000,000th) of an inch. A common unit of measurement in surface measurement research and in standard roughness (surface) unit values of performance of machinery.

Microinch: One millionth of an inch.

Microlug: A test coupon used to give rapid indication of the effectiveness of magnesium treatment of ductile iron.

Micrometer: An instrument used for measuring diameter usually in thousandths of an inch.

Micrometer (or Micron): One-millionth of a meter. It can also be expressed as 10^{-6} meter.

MicroMonitor: embedded system boot platform centered around an extensible embedded flash file system

microphone: An electromechanical transducer that converts sound pressure into an electrical

signal.

Microprocessor: A CPU that is manufactured on a single integrated-circuit(IC) chip.

microprocessor: A large scale integrated circuit that can be programmed to perform arithmetic and logic functions and to manipulate data.

Microprocessor: Single chip computer element containing the control unit, central processing circuitry; arithmetic and logic function

Microprocessor. : A computer-on-a-chip.

Microscopic: Minute object or structures which are invisible or not clearly distinguished without the use of a microscope.

Microsection: A metal specimen whose surface has been polished and etched to reveal the microstructure.

Microshrinkage: Very finely divided porosity resulting from interdendritic shrinkage resolved only by use of the microscope; may be visible on radiographic films as mottling. Etching shows they occur at intersections of convergent dendritic directions.

Microspectroscopy: A method of identifying metallic constituents using spectrographic arc.

Microstructure: The structure of a prepared surface of a metal as revealed by a microscope at a magnification greater than ten diameters.

Microtome (Brit.): An instrument for cutting thin sections of soft specimens.

Microware: A short electrical wave usually a wave length of less than 30 cm.

microwave: Electromagnetic radiation with wavelengths ranging from very short radio waves to almost infra-red region. Wavelengths from 300 mm to 1 mm.

Microwave: Substations commonly use microwave communication equipment for communication with local and regional electric power system control centers. This system allows for rapid communication and signaling for controlling the routing of power.

Microwave Frequency: The frequency of a microwave usually above 1000 megacycles per second.

Microwave oven: A household cooking appliance consisting of a compartment designed to cook or heat food by means of microwave energy. It may also have a browning coil and convection heating as additional features.

Microwave. : A sub-classification of the electromagnetic spectrum. Generally covers the wavelength region from vhf to ehf (3 meters to .3 cm).

Mid Point Sectioning Substation: A substation located at the electrical interface of two sections of electrified railway. It contains provision for the coupling of the sections electrically in the event of loss of supply to one section.

Middle Atlantic: New Jersey, New York, and Pennsylvania;

Middle distillates: A general classification of refined petroleum products that includes distillate fuel oil and kerosene.

Middlings: In coal preparation, this material called mid-coal is neither clean nor refuse; due to their intermediate specific gravity, middlings sink only partway in the washing vessels and are removed by auxiliary means.

Midget: A device with a body diameter smaller than those devices of a similar rating.

Midget Fuse: A term describing a group of fuses used for supplementary circuit or component protection, all having dimensions of 1-1/2" long and 13/32" diameter.

Midgrade gasoline: Gasoline having an antiknock index, i.e., octane rating, greater than or

equal to 88 and less than or equal to 90. Note Octane requirements may vary by altitude.

Midgrade gasoline: Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 88 and less than or equal to 90. Note Octane requirements may vary by altitude.

Mids, multifunctional information distribution system. : An advanced information distribution system, using jtids waveform, that provides navigation, communication and identification capabilities in an integrated form for application in air, land, and maritime tactical operations.

Mid-size passenger car: A passenger car with between 110 and 119 cubic feet of interior passenger and luggage volume.

Midwest: Consists of the Illinois and Michigan Coal Basins. The following comprise the Midwest Region Illinois, Indiana, Michigan, and western Kentucky.

Midwest Region.: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

MII: media-independent interface

Mike Mark: Narrow continuous line near the rolled edge caused by a contacting micrometer

Mikro Tester: A low load hardness tester, suitable for both Vickers and Knoop tests, working with loads of between 10 to 3000 grams.

Mil: One thousandth of an inch (0.001 inch)

Mil: One one thousandth of an inch

Mil Std: United States Government military standards, specifications, usually requiring rugged, exacting testing equal to the exigencies of combat usage.

mil : A unit of small length in the imperial system equal to one-thousandth of an inch. 1 mil = 2.54×10^{-5} m

Mild Steel: Carbon steel containing a maximum of about 0.25% C.

mile: Unit of distance in the imperial system. 1 mile = 1.609 km

Miles per gallon (MPG): A measure of vehicle fuel efficiency. Miles per gallon or MPG represents "Fleet Miles per Gallon." For each subgroup or "table cell," MPG is computed as the ratio of the total number of miles traveled by all vehicles in the subgroup to the total number of gallons consumed. MPGs are assigned to each vehicle using the EPA certification files and adjusted for on-road driving.

miles per hour (mph): Unit of speed in the imperial system. 1 mph = 0.44704 m/s

Military: Kerosene-type jet fuel intended for use in military aircraft.

Military use: Includes sales to the Armed Forces, including volumes sold to the Defense Fuel Supply Center (DFSC) for use by all branches of the Department of Defense (DOD).

Milivolt: One one thousandth of one volt.

Mill: A milling machine. Also, the act of performing an operation on the milling machine.

Mill: A monetary cost and billing unit used by utilities; it is equal to 1/1000 of the U.S. dollar (equivalent to 1/10 of 1 cent).

Mill capital: Cost for transportation and equipping a plant for processing ore or other feed materials.

Mill Edge: A hot band processed through the Pickler without being side trimmed. This replaces the old term, band edge.

Mill feed: Uranium ore supplied to a crusher or grinding mill in an ore-dressing process.

Mill Finish: A surface finish produced on sheet and plate. Characteristic of the ground finish

used on the rolls in fabrication.

Mill Scale : Iron oxide scale formed on steel during hot working processes, cooled in air

Mill Stars: Multi pointed white iron or hard iron bodies used in a Tumbling Barrel to assist in polishing and cleaning.

Milli (m): Prefix for units of measurement equal to thousandths (1/1000 or 10⁻³).

milli (m): Decimal sub-multiple prefix corresponding to one-thousandth or 10⁻³.

Milling: The grinding or crushing of ore, concentration, and other beneficiation, including the removal of valueless or harmful constituents and preparation for market.

Milling: Process by which minerals are extracted from ore, usually at the mine site.

Milling capacity: The maximum rate at which a mill is capable of treating ore or producing concentrate.

Milling Cuffer: A cutting tool, generally cylindrical in shape. Used on a milling machine and operated essentially like a circular saw.

Milling of uranium: The processing of uranium from ore mined by conventional methods, such as underground or open-pit methods, to separate the uranium from the undesired material in the ore.

Million British Thermal Units: MMBtu. See Btu.

Million Instructions Per Second (MIPS): Unit for expressing the speed of processor execution of machine code instructions.

Milliroentgen : A sub multiple of the roentgen equal to one thousandth (1/1000th) of a roentgen.

Milliscope: An instrument which gives an electrical warning when melt reaches a predetermined temperature.

Minable: Capable of being mined under current mining technology and environmental and legal restrictions, rules, and regulations.

Mine capital: Cost for exploration and development, pre-mining stripping, shaft sinking, and mine development (including in-situ leaching), as well as the mine plant and its equipment.

Mine count: The number of mines, or mines collocated with preparation plants or tipples, located in a particular geographic area (state or region). If a mine is mining coal across two counties within a state, or across two states, then it is counted as two operations. This is done so that EIA can separate production by state and county.

Mine Type: See Surface Mine and Underground Mine.

Mineral: Any of the various naturally occurring inorganic substances, such as metals, salt, sand, stone, sulfur, and water, usually obtained from the earth. Note For reporting on the Financial Reporting System the term also includes organic non-renewable substances that are extracted from the earth such as coal, crude oil, and natural gas.

mineral: Substance occurring naturally in the Earth.

Mineral : Natural inorganic substance which is either definite in chemical composition and physical characteristics or any chemical element or compound occurring naturally as a product of inorganic processes.

Mineral lease: An agreement wherein a mineral interest owner (lessor) conveys to another party (lessee) the rights to explore for, develop, and produce specified minerals. The lessee acquires a working interest and the lessor retains a non-operating interest in the property, referred to as the royalty interest, each in proportions agreed upon.

mineral oil: General name given to the various mixtures of natural hydrocarbons.

Mineral rights: The ownership of the minerals beneath the earth's surface with the right to remove them. Mineral rights may be conveyed separately from surface rights.

Mineral-matter-free basis: Mineral matter in coal is the parent material in coal from which ash is derived and which comes from minerals present in the original plant materials that formed the coal, or from extraneous sources such as sediments and precipitates from mineralized water. Mineral matter in coal cannot be analytically determined and is commonly calculated using data on ash and ash-forming constituents. Coal analyses are calculated to the mineral matter free basis by adjusting formulas used in calculations in order to deduct the weight of mineral matter from the total coal.

Mini Mills: Normally defined as steel mills that melt scrap metal to produce commodity products. Although the mini mills are subject to the same steel processing requirements after the caster as the integrated steel companies, they differ greatly in regard to their minimum efficient size, labor relations, product markets, and management style.

miniature circuit breaker mcb : A device designed to perform the same function as a fuse but resettable. When the circuit breaker activates, or trips out, it disconnects the circuit. The fault condition must be found and rectified before the mcb can be reset. Usually for ratings less than 63 A.

Miniature Lampholder: The smallest screw-in type lampholder accepting incandescent lamp bulbs of approximately 3/8" diameter commonly used in games, flashlights and the smallest Christmas tree bulbs.

Minicall.: (in packet-switched networks) the process of sending a datagram.

Minicomputer.: A small-scale or medium-scale computer (such as those made by dec, data general, hewlett-packard and others) usually operated with interactive dumb terminals and often having an open architecture. Also called mini for short. Contrast with mainframe computer and micro-computer.

Minimill Steel Producer: A steel company, which manufactures solid, steel products; starts with the steelmaking operation, generally consisting of an electric arc furnace, and converts the liquid steel into solid products. See Integrated Steel Producer.

Minimize. : A condition wherein normal message and telephone traffic is drastically reduced in order that messages connected with an actual or simulated emergency shall not be delayed.

Minimized Spangle: A dull Hot Dipped Galvanized surface appearance in which the normal zinc formation has been suppressed; achieved by applying water droplets or some other nucleating agent to the zinc surface after the bath but before the zinc solidifies to suppress the growth of spangle.

Minimum approach distance: The closest distance an employee is permitted to approach an energized or a grounded object.

Minimum discernible signal (mds). : The lower limit of useful signal input to a radar receiver, as determined by the signal-to-noise at the output. See radar sensitivity.

Minimum jamming range, (cross-over point). : See burn through range.

Minimum Load: Minimum current that the external load must draw to ensure proper operation of the photoelectric sensor. Most often associated with standard AC-two wire devices.

Minimum Residual Stress (MRS): The term applied to products, usually flat rolled, which

have been processed to minimize internal stress of the kind that causes distortion when material is disproportionately removed from one of the two surfaces through mechanical or chemical means.

Minimum shift keying (msk). : A derivative of qpsk developed for vlf submarine broadcast; used to increase the information rate in a given frequency band. See qpsk.

Minimum streamflow: The lowest rate of flow of water past a given point during a specified period.

Minimum Triple Spot Average Coating: The average of three coating weights test results obtained from a full width sample of a galvanized (or any other coated) coil 2 inches from each end and dead center.

Mining: An energy-consuming subsector of the industrial sector that consists of all facilities and equipment used to extract energy and mineral resources.

Mining Cable: The smallest diameter of a screw thread. Also known as the "Root diameter".

Mining Cable: A flame retardant cable especially constructed to withstand long time immersion or exposure to moisture for underground use in the environment of a mine or tunnel.

Mining operation: One mine and/or tippie at a single physical location.

Minivan: Small van that first appeared with that designation in 1984. Any of the smaller vans built on an automobile-type frame. Earlier models such as the Volkswagen van are now included in this category.

Minority carrier: A current carrier, either an electron or a hole, that is in the minority in a specific layer of a semiconductor material; the diffusion of minority carriers under the action of the cell junction voltage is the current in a photovoltaic device.

Minority carrier: A current carrier, either an electron or a hole, that is in the minority in a specific layer of a semiconductor material; the diffusion of minority carriers under the action of the cell junction voltage is the current in a photovoltaic device.

Minority carrier lifetime: The average time a minority carrier exists before recombination.

Mips, millions of instructions per second. : One measure of processing power.

Mirror Finish: A highly reflective finish obtained by polishing with successively finer abrasive and buffing extensively free of grit lines. Finish is used most for architectural applications. A comparable finish produced by cold rolling is Ulbrich's UlbraBright, which currently is not being produced.

Miscellaneous petroleum products: Includes all finished products not classified elsewhere (e.g., petrolatum lube refining by products (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feed stocks, and specialty oils).

Miscellaneous reserves: A supply source having not more than 50 billion cubic feet of dedicated recoverable salable reserves and that falls within the definition of Supply Source.

Miscibility: Solubility; ability of two or more liquids to form a homogeneous solution.

Mismatch: Error in register between two halves of a forging by opposing die halves not being in perfect alignment

Mis-match: A termination having a different impedance than that for which a circuit or cable is designed.

Misrun: Denotes an irregularity of the casting surface caused by incomplete filling of the mold due to low pouring temperature, gas back pressure from inadequate venting of the mold,

and inadequate gating.

Misting: A coating defect consisting of a condition encountered, primarily on D & I high speed beverage can coating machines, which appears as many fine spots of coating.

Mitis Casting: Casting of very mold steel.

Mixed Gas: A natural gas and air mixture which lowers the BTU value of the gas to approximately 750 BTU per cubic feet.

Mixed oxide fuel (MOX): Reactor fuel which consists of both uranium and plutonium oxides, usually about 5% Pu, which is the main fissile component.

Mixed waste: Waste containing both radioactive and hazardous constituents.

MKS: Meter-kilogram-second

mks system: The metric system in which the meter, kilogram and the second are the fundamental units.

ML: Single-conductor, paper-lead cables twisted together without overall covering. Type A - AVC mine locomotive cable; Type B - motor lead wire.

MLD: (Multi-Location Dimming) This is achieved through the use of specific components designed to interface and allow dimming control from any location, master or remote. In a true MLD situation, the master unit performs all dimming and switching functions. The remote units provide input to the master (i.e. dim, bright, on or off, as desired).

MM: Million (10⁶).

MM: Mining machine cable.

MMbb/d: One million (10⁶) barrels of oil per day.

MMBtu: One million (10⁶) British thermal units.

MMcf: One million (10⁶) cubic feet.

MMgal/d: One million (10⁶) gallons per day.

MMmt: One million (10⁶) metric tons.

MMst: One million (10⁶) short tons.

Mo: Chemical symbol for Molybdenum

mobile communications equipment. : Communications equipment which is installed in or on a vehicle and can be operated while the vehicle is in motion. Some member nations apply this term to similarly installed equipment which can only be operated while the vehicle(s) is/are stationary.

Mobile home: A housing unit built on a movable chassis and moved to the site. It may be placed on a permanent or temporary foundation and may contain one room or more. If rooms are added to the structure, it is considered a single-family housing unit. A manufactured house assembled on site is a single-family housing unit, not a mobile home.

Mobile service.: A service of radio communication between mobile and land stations, or between mobile stations.

mobile substation : A movable substation which is used when a substation is not working or additional power is needed.

Mobile Transformer: A transformer that often is mounted on a leak proof base and can be installed and operated in a semitrailer, box truck or sea freight container.

Mobile Transformer: the portable transformers which can be moved from one place to another in emergency having limited capacity.

Mock Up: A full size model built accurately for study, testing or display.

ModBus: Proprietary communication protocol used on secondary networks between HMI, substation computers or Bay computers and protective relays.

ModBus: A serial communications protocol used to connecting industrial electronic devices of the same network

Model: A proportional representation of an object in any scale.

Modell Number: A value giving a measure of wear resistance.

Modem: Device utilized to convert computer data into sound that can be transmitted over phone lines. First used to send telegrams the modem received the name from the process of modulation and demodulation at the receiving end.

modem: A hardware device that converts digital computer data into analog tones that can be transmitted over dial-up telephone circuits.

Modem: modulator and demodulator . It connects the computers and terminal over the telephone circuits. Modular converts the signals to correct codes fro transmission over the communication line. And on receiving end demodulator converts the signals for communication to the computer using the computer interface unit.

Modem eliminator, modem emulator. : A device used to connect a local terminal and a computer port in lieu of the pair of modems that they would expect to connect to. Allows dteto-dte data and control signal connections otherwise not easily achieved by standard cables or connectors. Modified cables (crossover cables) or connectors (adapters) can also perform this function.

Modem : Abbreviation for modulator-demodulator.A device that converts data from one form into another, as from one form usable in data processing to another form usable in telephonic transmission.

Modem, (modulator - demodulator). : A device that converts serial digital data from a transmitting terminal to a signal suitable for transmission over a telephone channel and then reconverts the signal to serial digital data for the receiving terminal. Also called a data set (usa).

Moderator: A material, such as ordinary water, heavy water, or graphite, used in a reactor to slow down high-velocity neutrons, thus increasing the likelihood of further fission.

moderator: A substance used in nuclear reactors to reduce the speed of fast neutrons produced by nuclear fission.

Moderator: A material such as light or heavy water or graphite used in a reactor to slow down fast neutrons by collision with lighter nuclei so as to expedite further fission.

Modification: A process in which the eutectic temperature, structure, and composition of aluminum silicon alloys are apparently altered by the addition of small amounts of a third element, such as sodium. A similar phenomenon can be effected by chill casting.

Modified clear. : A message which contains combinations of clear text or cipher codes.

Modular Jack: A female telecommunications connector, which is mounted in a fixed location. Jacks are specified in IEC 603-7 and FF Part 68 Subpart F.

Modular Plug: A male telecommincations connector, specified in IEC 603-7 and FCC part 68 subpart F.

Modulation factor. : Of an amplitude modulated wave, the ratio of the difference between the maximum and minimum amplitudes of the wave to the sum of these amplitudes. Note. The modulation factor is usually expressed as a percentage

Modulation index (in frequency shift modulation). : In two-state frequency shift keying, the ratio of the frequency shift in hertz to the modulation rate in baud's.

modulation. : The process in which the amplitude, frequency or phase of a carrier wave is varied with time in accordance with the waveform of superimposed intelligence.

modulator: The process of varying some characteristic of one wave (carrier wave) in accordance with some characteristic of another wave.

Module: A board assembly and its associated mechanical parts. A module contains everything required to occupy one or more slots in a mainframe chassis.

Module: See 'Photovoltaic Module.'

Module (1). : (hardware) short for card module.

Module (2). : (software) a program unit or subdivision that performs one or more functions.

Module (Photovoltaic): See "Photovoltaic Module".

Modules: Photovoltaic cells or an assembly of cells into panels (modules) intended for and shipped for final consumption or to another organization for resale. When exported, incomplete modules and unencapsulated cells are also included. Modules used for space applications are not included.

Modulo. : A term used to express the maximum number of states for a counter; this term is used to describe several packet-switched network parameters, such as packet number (usually set to modulo 8 - counted from 0 to 7). When the maximum count is exceeded, the counter is reset to 0.

Modulus of Elasticity: The ratio of stress to strain in an elastic material.

Modulus Of Resilience: The amount of strain energy per unit volume required to stress a material from zero to the yield stress limit. The modulus of resilience is proportional to the area under the elastic portion of the stress strain diagram. Units are Pa or psi.

Modulus Of Rigidity: In a torsion test the ratio of the unit shear stress to the displacement caused by it per unit length in the elastic range. See Shear Modulus

Modulus Of Rupture: Used in both bending and torsion testing. In bending, the modulus of rupture is the bending moment at fracture divided by the section modulus. In torsion, modulus of rupture is the torque at fracture divided by the polar section modulus.

Modulus Of Toughness: Amount of work per unit volume of a material required to carry that material to failure under static loading. Equal to the area under the entire stress strain curve. Units are Pa or psi.

Mogul Lampholder: The largest screw-in type of lampholder accepting incandescent lamp bulbs having screw bases approximately 1 1/2" in diameter. Used in street lighting fixtures and industrial high bay fixtures.

Mogullizer: Equipment for sealing by vacuum impregnation of small pores in castings.

Moh's Scale: A scratch hardness test for determining comparative hardness using ten standard minerals, from talc to diamond.

Moist (coal) basis: Moist coal contains its natural inherent or bed moisture, but does not include water adhering to the surface. Coal analyses expressed on a moist basis are performed or adjusted so as to describe the data when the coal contains only that moisture that exists in the bed in its natural state of deposition and when the coal has not lost any moisture due to drying.

Moisture content: The water content of a substance (a solid fuel) as measured under

specified conditions being the "dry basis," which equals the weight of the wet sample minus the weight of a (bone) dry sample divided by the weight of the dry sample times 100 (to get percent); "wet basis," which is equal to the weight of the wet sample minus the weight of the dry sample divided by the weight of the wet sample times 100.

Moisture Teller: A patented apparatus for the rapid determination of moisture content of molding sand.

Moisture-Resisting: Apparatus is designed as moisture-resisting when so constructed or treated that it will not be readily injured by moisture.

Molasses Water: A solution of water and molasses sprayed on sand molds to strengthen mold surface and yield a fine finish layer.

Mold Board (Follow Board): The board upon which the pattern is placed to make the mold.

Mold Clamp: Devices used to hold or lock cope and drag flask parts together.

Mold Cover Half (Cover Die): 1) The top half of the mold, the cope, 2) in die casting, the front half of the die, which remains stationary as the die is opened.

Mold Facing: See Mold Coating

Mold Jacket: A wooden or metal form slipped over a mold to support the side during pouring.

Mold Shift: A casting discontinuity resulting from misalignment of the cope and drag halves.

Mold Weight: A weight that is applied to the top of a mold to keep the mold from separating.

Moldability: Ability of sand to flow into a flask and around a pattern; measured in the amount of sand falling through an inclined screen or slot.

Moldability Controller: A patented device for controlling water additions to sand mix to maintain a consistent moldability index.

Molded On: An adapter that is factory molded to a length of flexible cord.

Molded-Case Circuit Breaker: A circuit breaker which is assembled as an integral unit in a supporting and enclosing housing of molded insulating material.

Molding Gravel: The coarser and more permeable grades of molding sand generally used in production casting of exceptional size and weight.

Molding Machine: A machine for making molds.

Molding Material: A material suitable for making molds into which molten metal can be cast.

Molding Sand Mixture: A sand mixture suitable for making molds into which molten metal can be cast.

Molding Sands: Sands containing over 5% natural clay, usually between 8 and 20%. See also Naturally Bonded Molding Sand

Mole: The quantity of a compound or element that has a weight in grams numerically equal to its molecular weight. Also referred to as "gram molecule" or "gram molecular weight."

mole (mol): The mole is the SI unit of the amount of substance. It is defined as the amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilogram of carbon 12; [1971]

Molecular Weight: Weight of the smallest quantity of a substance possessing all its normal physical properties.

Molecule: The smallest particle of a substance that can exist in the free state and which has the same composition as any larger mass of the substance.

Molybdenum (Mo): An alloying element used as a raw material for some classes of stainless

steel. Molybdenum in the presence of chromium enhances the corrosion resistance of stainless steel.

Molybdic Oxide: The oxide of molybdenum; added to the furnace in briquetted form as an important finishing constituent in nitriding steels.

Momentary: the process or incident which Lasting for only a moment

Momentary Contact: A switch which establishes circuit contact when its actuator is moved to and held in the ON position. The circuit is broken when the actuator is allowed to return, of itself, to the OFF position (such a switch may also be furnished to operate in the opposite mode).

momentary overvoltage or swell : An increase in voltage outside the normal tolerance for a few seconds or less. Voltage swells are often caused by sudden load decreases or turn-off of heavy equipment.

Momentary Rating: The rating of a device to withstand momentary, very high current, without incurring damage.

Momentary Rating: the function between the ordered sets of given orders .

Monel: A high nickel alloy, approximately 67% Ni, 28% Cu, the balance Fe, Mn, Si and other elements. Monel metal is resistant to corrosion and is widely used to resist the action of acids.

Monitor station. : (in lan technology) on ring networks, the unit responsible for removing damaged packets and for making sure that the ring is intact.

Monitoring: 1) Periodic or continuous determination of the dose rate in an occupied area (area monitoring) or the dose received by a person (personnel monitoring), 2) periodic or continuous determination of the amount of ionizing radiation or radioactive contamination present in an occupied region, as a safety measure for purposes of health protection, 3) personnel monitoring any part of any individual, his breath, or excretions, or any part of his clothing.

monitoring (1). : The act of listening, carrying out surveillance on, and/or recording the emissions of one's own or allied forces for the purpose of maintaining and improving procedural standards and security, or for reference, as applicable. See also communication security (comsec).

Monitoring (2). : The act of listening, carrying out surveillance on, and/or recording of enemy emissions for intelligence purposes.

Monitoring Area: Routine monitoring of the level of radiation or of radioactive contamination of any particular area, building, room or equipment. Usage in some laboratories or operation distinguishes between routine monitoring and survey activities.

Monkey Cooler: In a blast furnace, the smaller of a series of three water coolers protecting the cinder notch. The largest is the cooler, while the in between cooler is the intermediate cooler.

Mono filament: A term denoting a single strand filament as opposed to a braided or twisted filament.

Monocast Process: A patented application of resin bonded sand to line the flask in the production of centrifugal cast pipe. The resin bonded layer is thinner than the conventional sand lining.

monochromatic radiation: Radiation characterized by a single frequency. In practice, radiation of a very small range of frequencies that can be described by stating a single

frequency.

Monolithic: An isothermal reversible reaction in a binary system, in which a liquid on cooling, decomposes into a solid and a second liquid of different composition. (Compare with Eutectic.)

Monolithic: Fabricated as a single structure.

Monomer: A term denoting a single property or ingredient. A molecule of low molecular weight used as a starting material for polymerization to produce molecules of larger molecular weight called polymers.

monopoly : The only seller with control over market sales.

Monotonic: function or of a particular set of values of a function

Monotron: An instrument for measuring indentation hardness. It is fitted with two dials, one to measure depth of penetration, the other the load.

Months Of Inventory: Ratio of the end of period inventory to average monthly level of sales for the period.

Montmorillonite: A very plastic clay, more siliceous than kaolinite; the principal constituent of bentonite.

Montreal protocol: The Montreal Protocol on Substances that Deplete the Ozone Layer (1987). An international agreement, signed by most of the industrialized nations, to substantially reduce the use of chlorofluorocarbons (CFCs). Signed in January 1989, the original document called for a 50-percent reduction in CFC use by 1992 relative to 1986 levels. The subsequent London Agreement called for a complete elimination of CFC use by 2000. The Copenhagen Agreement, which called for a complete phase out by January 1, 1996, was implemented by the U.S. Environmental Protection Agency.

Moore: A constant load rotating bending type fatigue testing machine.

Morgoil: Oil used to lubricate the finishing mill back up roll bearings.

Morgoil Alarm: A warning received when morgoil pressure is low or morgoil flow is stopped.

Morgoil Pumps: Pumps that produce the morgoil pressure for the morgoil system.

Morgoil System: System that encompasses all the parts needed to supply morgoil to the back up rolls.

Morse code. : A two-condition telegraph code in which characters are represented by groups of dots and dashes, these groups being separated by spaces.

Mortality Curve: A graphic representation of lamp burnout as a function of time.

mortality rate: The number of operating hours elapsed before a certain percentage of the lamps fail.

MOSFET : Metal oxide semiconductor FET often used in switching amplifier applications. This transistor provides extremely low power dissipation even with high currents.

Motion Resistant Conductor: ACSR with Motion Resistant Variable Profile.

motor: A rotating device which converts electrical power into mechanical power.

Motor: A machine which converts electrical power into mechanical power.

Motor gasoline (finished): A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification

VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. Motor Gasoline includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline, but excludes aviation gasoline. Note Volumetric data on blending components, such as oxygenates, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline.

Motor gasoline blending: Mechanical mixing of motor gasoline blending components, and oxygenates when required, to produce finished motor gasoline. Finished motor gasoline may be further mixed with other motor gasoline blending components or oxygenates, resulting in increased volumes of finished motor gasoline and/or changes in the formulation of finished motor gasoline (e.g., conventional motor gasoline mixed with MTBE to produce oxygenated motor gasoline).

Motor gasoline blending components: Naphthas (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into finished motor gasoline. These components include reformulated gasoline blend stock for oxygenate blending (RBOB) but exclude oxygenates (alcohols, ethers), butane, and pentanes plus. Note Oxygenates are reported as individual components and are included in the total for other hydrocarbons, hydrogens, and oxygenates.

motor generator set: A motor generator set consists of an ac motor coupled to a generator. The utility power energizes the motor to drive the generator, which powers the critical load. Motor generator sets provide protection against noise and spikes, and, if equipped with a heavy flywheel, they may also protect against sags and swells.

Motor speed: The number of revolutions that the motor turns in a given time period (i.e. revolutions per minute, rpm).

Motor-Generator Set: A conversion device consisting of one or more motors mechanically coupled to one or more generators.

Motorized Spindles: A spindle is a general term used to describe any rotating, cylindrical device used to perform a task. For example, motorized spindles are mechanical devices that combine a motor, usually a brushless DC motor, with a spindle for the purpose of driving a high speed device such as a drill, router, or CNC machine.

Motorized Variac: An autotransformer for stepless voltage control in shell molding.

Mottled Cast Iron: Iron which consists of a mixture of variable proportions of gray iron and white cast iron; such a material has a mottled fracture.

Mottling: A coating defect consisting of a non uniform appearance of the cured coating in which the coating has a random, discontinuous poor flow or partial dewetted appearance.

moulded case circuit breaker mccb: A circuit breaker with a moulded case originally designed for currents exceeding 100 A.

Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; Mountaintop mining, sometimes considered a variation of contour mining, refers to the mining of a coalbed that underlies the top of a mountain. The overburden, which is the mountaintop, is completely removed so that all of the coal can be recovered. The overburden material is later replaced in the mined-out area. This method leaves large plateaus of level land.

MOV: Metal Oxide Varistor

MOV ,metal oxide varistor: A solid state device which becomes conductive when the voltage across it exceeds a certain level. When the voltage exceeds the MOV's threshold, a heavy current flows through the MOV instead of the load.

moving coil meter: In this instrument, a moving coil is suspended between the poles of a permanent magnet. When a current is passed through the coil, the coil becomes an electromagnet and tries to align with the permanent magnet. The deflection becomes proportional to the current.

moving iron meter: An instrument working on the principle of a moving iron placed within an electromagnet getting an induced emf and with the deflection being proportional to the square of the current. The meter is calibrated with the square root of the deflection and hence has basically a non-linear scale.

Moving target indicator (mti). : A radar presentation which shows only targets Which are in motion. Signals from stationary targets are subtracted out of the return signal by the output of a suitable memory circuit.

Mp: Melting point.

MPF: Mine power feeder. 5-8-15KV

MPG: See Miles Per Gallon

MPG shortfall: The difference between actual on-road MPG and EPA laboratory test MPG. MPG short fall is expressed as gallons per mile ratio (GPMR).

Mpl, multi-schedule private line. : At&t's tariff for a voice-grade leased line.

MRFR: Moisture resistant, flame-retardant finish.

MRO: Maintenance and Repair

Ms Temperature: The temperature at which a martensitic transformation starts during cooling after austenitization.

MSA: See Metropolitan Statistical Area

MSHA: Mine Safety and Health Administration

MSHA: Mine Safety and Health Administration, U.S. Dept. of Labor. Establishes standards and safety requirements for mines. "MSHA" may be printed on cables that have been accepted for listing as flame-resistant.

MSHA ID number: Seven (7)-digit code assigned to a mining operation by the Mine Safety and Health Administration.

Msi, medium-scale integration. : A term used to describe a multi-function semiconductor device with a medium density (up to 100 circuits) or electronic circuitry contained on a single silicon chip. (see table following lsi for comparison of circuit density ranges).

MSW: See Municipal Solid Waste

Mta, message transfer agent. : The system responsible for relaying, storage and delivery of messages in mhs.

MTBE: Methyl Tertiary Butyl Ether

MTBE (methyl tertiary butyl ether) (CH: 333An ether intended for gasoline blending as described in

Mtbf, mean-time-between-failures. : A figure of merit for electronic equipment or systems that indicates the average duration of periods of fault-free operation. Used in conjunction with mtrr to derive availability figures.

Mttr, mean-time-to-repair. : A figure of merit for electronic equipment or systems that

indicates the average time required to fix the equipment or system. Used in conjunction with mtbf to derive availability figures.

MTW: Machine tool wire, used for electrical connections inside equipment.

MTW: Thermoplastic-insulated machine tool wire. 90°C to 105°C, 600V

Mud: A term frequently used to designate plastic lining materials. See also Daubing

Mud Daub: See Daubing

Mud Drum: The lower drum of a boiler. It is used as a settling point for solids contained in the feedwater and as a feedpoint for the lower wall headers and floor tubes.

Muliductor Power Source: A device to convert standard 3 phase, 60 cycle current to single phase, 180 cycle current, so called medium frequency; produces a strong, controlled stirring action for induction melting.

Mullen Test: Measurement of bursting strength of foil in pounds per square inch. Testing machine applies increasing pressure to one square inch of the sample until it ruptures.

Muller: A type of foundry sand mixing machine.

Mulling And Tempering: The thorough mixing of sand with a binder, either natural or added, with lubricant or other fluid, as water.

Mult: A mult is the term used to describe the slitting of a coil into multiple smaller strips. If a coil is slit into strips less than 9, each strip is referred to as a mult and does not receive an individual IPM number. Mults are not removed from the line individually, but as a whole coil unit. For reasons pertaining to customer orders, however, they may be separated and packaged with mults from other coils for shipping.

Multi Stage Pumps: No. 3 and No. 10 pumps that are designed to put out different amounts of water pressure by changing the speed of the pump by opening up different ports on the turbine of the pump.

Multicast bit.: (in lan technology) a bit in the ethernet addressing structure used to indicate a broadcast message (a message to be sent to all stations).

Multichannel radio equipment. : A radio equipment designed to provide several channels of communications simultaneously.

Multiconductor: More than one conductor within a single cable complex.

Multicrystalline: Material that is solidified at such a rate that many small crystals (crystallites) form. The atoms within a single crystallite are symmetrically arranged, whereas crystallites are jumbled together. These numerous grain boundaries reduce the device efficiency. A material composed of variously oriented, small individual crystals. (Sometimes referred to as polycrystalline or semicrystalline).

Multi-Crystalline (Photovoltaic): A material that is solidified at such a rate that many small crystals (crystallites) form. The atoms within a single crystallite are symmetrically arranged, whereas the crystallites are jumbled together. These numerous grain boundaries reduce the device

Multi-element transducer: A transducer having two or more measuring elements. The signals from the individual elements are combined to produce an output signal corresponding to the measurand.

Multifrequency radio equipment. : A radio equipment capable of operating on any one of a number of preset carrier frequencies.

Multijunction device: A photovoltaic device containing two or more cell junctions, each of

which is optimized for a particular part of the solar spectrum, to achieve greater overall efficiency.

Multimedia: Applications which communicate information using more than one cabling means.

Multimeter: An instrument that can measure current, voltage, and resistance on various ranges. Many multimeters can measure other circuit values such as frequency and capacitance. May have digital (DMM) or analog displays (VOM).

Multimode Optical Fiber: An optical fiber cable that allows light to travel in many bound modes; used in LAN applications. Multimode fibers have a larger core than single mode (core/cladding 62.5/125 micrometers)

Multinational security accreditation board (msab). : Msab grants approvals, Utilizing standardized accreditation processes, to national c2 systems operating with those of other nations in coordination with each participating nation's national approving authority. The Msab is a standing body made up of representatives from the auscannzokus nations and Nato. The msab role is to facilitate and endorse the accreditation of all interconnected information systems established between two or more of the cceb nations and the nato office of security.

multinational security accreditation board (msab). : A body authorised jointly by the national accreditation authorities to act on behalf of the coalition for endorsing the nationally accredited components of combined cis and approving connections of national affiliated systems to them.

Multiple: An adapter that is attached to the power cord for equipment that provides an additional receptacle opening at the top of the adapter.

Multiple completion well: A well equipped to produce oil and/or gas separately from more than one reservoir. Such wells contain multiple strings of tubing or other equipment that permit production from the various completions to be measured and accounted for separately. For statistical purposes, a multiple completion well is reported as one well and classified as either an oil well or a gas well. If one of the several completions in a given well is an oil completion, the well is classified as an oil well. If all of the completions in a given well are gas completions, the well is classified as a gas well.

Multiple cropping: A system of growing several crops on the same field in one year.

Multiple frequency signalling (mf). : A signalling system used between a subscriber and the local exchange which transmits the digits of the required telephone number from the calling subscriber to the local exchange by sending a dual tone for each digit of the number.

Multiple Mold: A composite mold made up of stacked sections, each of which produces a complete gate of castings, and poured from a central downgate.

Multiple purpose project: The development of hydroelectric facilities to serve more than one function. Some of the uses include hydroelectric power, irrigation, water supply, water quality control, and/or fish and wildlife enhancement.

Multiple purpose reservoir: Stored water and its usage governed by advanced water resource conservation practices to achieve more than one water control objective. Some of the objectives include flood control, hydroelectric power development, irrigation, recreation usage, and wilderness protection.

Multiple Thread Screw: A screw made of two or more threads to provide an increased lead with specified pitch.

Multiple Weave: Wire mesh grips woven utilizing single, double and triple strand of each wire material.

multiplex : To put information from several sources on to a single line or transmission path.

Multiplex, frequency division. : Multiplexing in which a separate frequency band is allocated each tributary channel in the common channel. Abbreviated fdm.

Multiplex. : Designating or pertaining to an installation in which a common transmission channel is divided into several separate tributary channels each capable of transmitting signals independently in the same direction.

Multiplexer (Mux): A switching device that sequentially connects multiple inputs or outputs in order to process several signal channels with a single A/D or D/A converter.

Multiplexing: Combining a number of individual messages over a common path - usually by frequency division or time division.

Multiplexing, multiplexors (1). : Division of a composite signal among several channels; concentrators, fdms and tdms are different kinds of multiplexors.

Multiplexing, multiplexors (2). : A device that allows the simultaneous use of a number of channels on a single circuit.

Multipoint circuit. : A circuit which connects terminals at more than two points.

Multipoint line, multipoint connection. : A single communications line or circuit interconnecting several stations supporting terminals in several different locations. Use of this type of line usually requires some kind of polling mechanism, with each terminal having a unique address. Also called multidrop line.

Multipurpose jammer (mpj). : An electronic equipment capable of a jamming multiple frequencies throughout a very broad band of frequencies simultaneously, or b. Combining two or more jamming roles, e.g. Barrage plus deception.

Multi-section transducer: A transducer having two or more independent measuring circuits for one or more functions.

Multi-shot reclosing: A reclosing scheme that permits more than one reclosing operation of a CB after a fault occurs before lockout occurs.

Multitasking: Property of an operating system in which several processes can be run simultaneously.

Multi-User Telecommunications Outlet Assembly: A device grouping several telecommunications outlets into one location.

municipal electric utility : A power utility system owned and operated by a local jurisdiction or local authority.

Municipal solid waste: Residential solid waste and some nonhazardous commercial, institutional, and industrial wastes.

municipal solid waste : A Biomass resource that can be used to produce energy by the process of incineration.

Municipal waste: As defined in the Energy Security Act (P.L. 96-294; 1980) as "any organic matter, including sewage, sewage sludge, and industrial or commercial waste, and mixtures of such matter and inorganic refuse from any publicly or privately operated municipal waste collection or similar disposal system, or from similar waste flows (other than such flows which constitute agricultural wastes or residues, or wood wastes or residues from wood harvesting activities or production of forest products)."

Municipal waste to energy project or plant: A facility that produces fuel or energy from municipal solid waste.

Municipality: A village town, city, county, or other political subdivision of a State.

Muntz Metal: Alpha beta brass, 60% copper and 40% zinc. Stronger than alpha brass and used for castings and hot worked (rolled, stamped, or extruded) products. High strength brasses are developed from this by adding other elements.

Mushet Steel: An air hardened steel containing about 2% C, 2% Mn, and 7% W, developed by Scotsman Robert Musket in 1870.

Mushy Stage: The state between solid and liquid in alloys which freeze over a wide range of temperatures.

Music Wire: A polished high tensile strength cold drawn wire with higher tensile strength and higher torsional strength than any other material available. These high mechanical properties are obtained by a combination of the high carbon content, the patenting treatment and by many continuous passes through drawing dies. The high toughness characteristic of this material is obtained by the patenting. Such wire is purchased according to tensile strength, not hardness.

Mutual Capacitance: Capacitance between two conductors when all other conductors including ground are connected together and then regarded as an ignored ground.

mutual inductance: The ability of one conductor to induce an emf in a nearby conductor when the current in the first conductor changes. It is the constant of proportionality between the induced voltage in the second inductor and the rate of change of current in the first inductor.

Mutual Interference Protection: A feature in photoelectric sensors that eliminates false-singaling between similar mounted next to, or in close proximity to each other.

Mutual screening. : In electronic warfare. The protection of a unit not having a jamming capability by a unit which does have a jamming capability.

Mux. : Information for multiplexor.

MV: See "Medium Voltage".

MV: Medium voltage 5-35KV

MVA: Apparent Power expressed in Million VoltAmps.

MW: See Megawatt

MW: Mega Watt, one million watts.

MW: Radio hookup wire with polyvinyl insulation and plain or nylon jacket, or braid, or shield, 1000V.

MWe: See Megawatt electric

MWh: See Megawatthour

MWH: Mega Watt Hour, the use of one million watts for one hour.

MYD: Marina Yard and Dock Cable.

Mylar®: A synthetic compound with high dielectric qualities. A product of Dupont®. Usually sold in film form.

N connector. : A threaded connector for coax; n is named after paul neill. See also bnc and tnc.

N.P.S.: National Pipe Straight Thread

N.P.T.: National Pipe Tapered Thread

N/C: Normally Closed

N/O: Normally Open

N2 count. : (in x25 packet-switched networks) counter for allowable number of retransmission's.

Na: Chemical symbol for Sodium

NAAQS: National Ambient Air Quality Standards

Nace: National Association of Corrosion Engineers

NAICS: North American Industry Classification System. This is used in place of the PPI (Producer Price Index) system.

NAICS (North American Industry Classification System): A coding system developed jointly by the United States, Canada, and Mexico to classify businesses and industries according to the type of economic activity in which they are engaged. NAICS replaces the Standard Industrial Classification (SIC) codes.

Nak, negative acknowledgment (1). : (in bsc communications protocol) a control character used to indicate that the previous transmission block was in error and the receiver is ready to accept retransmission of the erroneous transmission block; contrast with ack.

Nak, negative acknowledgment (2). : (in multipoint systems) the not-ready reply to a poll.

Name plate: A metal tag attached to a machine or appliance that contains information such as brand name, serial number, voltage, power ratings under specified conditions, and other manufacturer supplied data.

Name plate capacity: See Generator name plate capacity (installed).

Nameplate Rating: The normal maximum operating rating applied to a piece of electrical equipment. This can include Volts, Amps, horsepower, kW, or any other specific item specification for the equipment.

NAND gate: The logic gate that outputs a 0 only when all its inputs are 1s.It gives the complement of the AND gate.

NAND gate or logic : Stands for NOT-AND.Gives an inverted output of AND logic.

nano (n): Decimal sub-multiple prefix corresponding to one-trillionth (US) or 10⁻⁹.

Nanotechnology. : The technology that relates to the manufacture of microscopic objects, or developments on the nanometre scale.

Nanovolt: An SI unit of electrical potential equal to 10⁻⁹ volts.

Naphtha: A generic term applied to a refined or partially refined petroleum fraction with an approximate boiling range between 122 degrees and 400 degrees Fahrenheit.

Naphtha less than 401 degrees Fahrenheit: See Petrochemical feedstocks.

Naphthas: Refined or partly refined light distillates with an approximate boiling point range between 122 and 400 degrees Fahrenheit. Blended further or mixed with other materials, they make high-grade motor gasoline or jet fuel. Also, used as solvents, petrochemical feedstocks, or as raw materials for the production of town gas.

Naphtha-type jet fuel: A fuel in the heavy naphtha boiling range having an average gravity of 52.8 degrees API, 20% to 90% distillation temperatures of 290 degrees to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4).It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds. Note Beginning with January 2004 data, naphtha-type jet fuel is included in Miscellaneous Products .

Narrow: Product whose width is below the customer's finished width tolerance.

Narrow Wall Plate: A cover plate designed for flush mounting on narrow partitions having a width dimension of two inches or less.

NARUC: See National Association of Regulatory Utility Commissioners.

national affiliated system (nas). : System(s) under a nation's control connected to a shared cis, but not included in it, that process, store or transmit shared information.

National Association of Regulatory Utility Commissioners (NARUC): An affiliation of the public service commissioners to promote the uniform treatment of members of the railroad, public utilities, and public service commissions of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, and the territory of the Virgin Islands.

National Defense Authorization Act: The federal law, enacted in 1994 and amended in 1995, that required the Secretary of Energy to prepare the Baseline Report.

National facilities. : (in packet-switched networks) non standard facilities selected for a given (national) network - which may or may not be found on other networks.

National information infrastructure (nii). : The nationwide interconnection of communications networks, computers, databases, and consumer electronics that make vast amounts of information available to users. The national information infrastructure encompasses a wide range of equipment, including cameras, scanners, keyboards, facsimile machines, computers, switches, compact disks, video and audio tape, cable, wire, satellites, fiber-optic transmission lines, networks of all types. Televisions, monitors, printers, and much more. The friendly and adversary personnel who make decisions and handle the transmitted information constitute a critical component of the national information infrastructure.

National priorities list: The Environmental Protection Agency's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The list is based primarily on the score a site receives from the Environmental Protection Agency Hazard Ranking System. The Environmental Protection Agency is required to update the National Priorities List at least once a year.

National Rural Electric Cooperative Association (NRECA): A national organization dedicated to representing the interests of cooperative electric utilities and the consumers they serve. Members come from the 46 states that have an electric distribution cooperative.

National Uranium Resource Evaluation (NURE): A program begun by the U.S. Atomic Energy Commission (AEC) in 1974 to make a comprehensive evaluation of U.S. uranium resources and continued through 1983 by the AEC's successor agencies, the Energy Research and Development Administration (ERDA), and the Department of Energy (DOE). The NURE program included aerial radiometric and magnetic surveys, hydrogeochemical and stream sediment surveys, geologic drilling in selected areas, geophysical logging of selected bore holes, and geologic studies to identify and evaluate geologic environments favorable for uranium.

Native gas: Gas in place at the time that a reservoir was converted to use as an underground storage reservoir in contrast to injected gas volumes.

Native load (electric): The end-use customers that the Load-Serving Entity is obligated to serve. NERC definition

Natural Aging: See Aging

Natural gas: A gaseous mixture of hydrocarbon compounds, the primary one being methane.

natural gas: A naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in porous geological formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

Natural gas field facility: A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, normal butane, pentanes plus, etc., and to control the quality of natural gas to be marketed.

Natural gas gross withdrawals: Full well-stream volume of produced natural gas, excluding condensate separated at the lease.

Natural gas hydrates: Solid, crystalline, wax-like substances composed of water, methane, and usually a small amount of other gases, with the gases being trapped in the interstices of a water-ice lattice. They form beneath permafrost and on the ocean floor under conditions of moderately high pressure and at temperatures near the freezing point of water.

Natural gas lease production: Gross withdrawals of natural gas minus gas production injected on the lease into producing reservoirs, vented, flared, used as fuel on the lease, and nonhydrocarbon gases removed in treating or processing operations on the lease.

Natural Gas Liquids (NGL): A group of hydrocarbons including ethane, propane, normal butane, isobutane, and natural gasoline. Generally include natural gas plant liquids and all liquefied refinery gases except olefins.

Natural gas liquids production: The volume of natural gas liquids removed from natural gas in lease separators, field facilities, gas processing plants, or cycling plants during the report year.

Natural gas marketed production: Gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring, nonhydrocarbon gases removed in treating and processing operations, and quantities vented and flared.

Natural gas marketer: A company that arranges purchases and sales of natural gas. Unlike pipeline companies or local distribution companies, a marketer does not own physical assets commonly used in the supply of natural gas, such as pipelines or storage fields. A marketer may be an affiliate of another company, such as a local distribution company, natural gas pipeline, or producer, but it operates independently of other segments of the company. In States with residential choice programs, marketers serve as alternative suppliers to residential users of natural gas, which is delivered by a local distribution company.

Natural gas plant liquids (NGPL): Those hydrocarbons in natural gas that are separated as liquids at natural gas processing, fractionating, and cycling plants. Products obtained include ethane, liquefied petroleum gases (propane, normal butane, and isobutane), and natural gasoline. Component products may be fractionated or mixed. Lease condensate and plant condensate are excluded.

Natural gas plant liquids (NGPL) production: The extraction of gas plant liquids constituents such as ethane, propane, normal butane, isobutane, and natural gasoline, sometimes referred to as extraction loss. Usually reported in barrels or gallons, but may be reported in cubic feet for purposes of comparison with dry natural gas volumes.

Natural Gas Policy Act of 1978 (NGPA): Signed into law on November 9, 1978, the NGPA is a framework for the regulation of most facets of the natural gas industry.

Natural gas processing plant: Facilities designed to recover natural gas liquids from a stream of natural gas that may or may not have passed through lease separators and/or field separation facilities. These facilities control the quality of the natural gas to be marketed. Cycling plants are classified as gas processing plants.

Natural gas production: See Dry natural gas production.

Natural Gas Used for Injection: Natural gas used to pressurize crude oil reservoirs in an attempt to increase oil recovery or in instances where there is no market for the natural gas. Natural gas used for injection is sometimes referred to as repressuring.

Natural gas utility demand-side management (DSM) program sponsor: A DSM (demand-side management) program sponsored by a natural gas utility that suggests ways to increase the energy efficiency of buildings, to reduce energy costs, to change the usage patterns, or to promote the use of a different energy source.

Natural gas, "dry": See Dry natural gas.

Natural gasoline: A commodity product commonly traded in NGL markets that comprises liquid hydrocarbons (mostly pentanes and hexanes) and generally remains liquid at ambient temperatures and atmospheric pressure. Natural gasoline is equivalent to pentanes plus.

Natural Gasoline and Isopentane: A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes isopentane which is a saturated branch-chain hydrocarbon, (C₅H₁₂), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Natural reservoir pressure: The energy within an oil or gas reservoir that causes the oil or gas to rise (unassisted by other forces) to the earth's surface when the reservoir is penetrated by an oil or gas well. The energy may be the result of "dissolved gas drive," "gas cap drive," or "water drive." Regardless of the type of drive, the principle is the same the energy of the gas or water, creating a natural pressure, forces the oil or gas to the well bore.

natural response: The natural response of a circuit refers to be behaviour of the circuit (in terms of voltage and current), in the absence of external excitation.

Natural Sand: Unconsolidated sand, sand derived from a rock in which grains separate along their natural boundaries. This includes soft sandstone where little pressure is required to separate the individual grains.

Natural streamflow: The rate of flow of water past a given point of an uncontrolled stream or regulated streamflow adjusted to eliminate the effects of reservoir storage or upstream diversions at a set time interval.

Natural uranium: Uranium with the U-235 isotope present at a concentration of 0.711 percent (by weight), that is, uranium with its isotopic content exactly as it is found in nature.

Natural uranium: Uranium with an isotopic composition as found in nature, containing 99.3% U-238, 0.7% U-235 and a trace of U-234. Can be used as fuel in heavy water-moderated reactors.

Naturally Bonded Molding Sand: A sand containing sufficient bonding material as mined to be suitable for molding purposes. Seldom used today in the metalcasting industry.

Naval Brass(Admiralty Brass): An alloy of copper,zinc and tin used widely in the marine industry because of resistance to saltwater corrosion;actually it?s bronze.

Navy (Usa) Tear Test: A method of evaluating the susceptibility of ship plate to brittle or

cleavage type fracture.

Nb: Chemical symbol for Niobium

NBR/PVC: (Same properties of Ezc) A blend of acrylonitrile - butadiene rubber and polyvinyl chloride (PVC). Used for jacketing.

Nbs: National Bureau of Standards

N-Conductor Cable: A cable having N-conductors that are insulated from one another. "N" represents the number of insulated conductors in the cable.

N-Conductor Concentric Cable: A cable composed of an insulated central conductor with tubular stranded conductors concentrically twisted around it and separated from each other by layers of insulation.

Nddt: Nil ductility transition temperature, determined in the dropweight test. Refers to the absence of the ductile fracture appearance and any reduction in area due to the brittle behavior of the steel.

Near Side: The free side of the line (closest to the operator's pulpit).

Near-End Crosstalk (NEXT): Electrical noise coupled from one pair of wires to another, measured from where the signal is transmitted.

Near-month contract for energy futures: The near-month contract, a term used in energy futures and options trading and other transactions, is the active contract with the shortest time to maturity. It is the contract that will expire first (often, but not always, within the next month). The near month is also called the prompt month, the front month, the lead month, and the first nearby.

Neat Brick: Brick with faces arranged so one of the flat faces is inclined toward the other, almost eliminating one end face.

Neat Cement: Portland Cement mixed with water only.

NEC: National Electrical Code (NFPA70).

NEC: National Electrical Code

NEC Dimensions: These are dimensions once referenced in the National Electrical Code. They are common to Class H and K fuses and provide interchangeability between manufacturers for fuses and fusible equipment of given ampere and voltage ratings.

NEC, national electrical code: A set of rules and regulations that are put out by the National Fire protection Association. Generally accepted as the building wiring standard in the US.

Neck Down : Reduction in area concentrated at the subsequent location of fracture when a ductile metal is stressed beyond its yield point in tension.

Necking Down: Reduction in area concentrated at the subsequent location of fracture when a ductile metal is stressed beyond its yield point in tension.

Nucleus: The first structurally determinate particle of a new phase or structure that may be about to form. Applicable in particular to solidification, recrystallization, and transformations, in the solid state.

Needling Agents: Special agents such as boron which markedly increase the hardness of steel.

Need-to-know (1). : A criterion used in security procedures that requires the custodians of classified information to establish, prior to disclosure, that the intended recipient must have access to the information to perform his/her official duties). (aus)

Need-to-know (2). : A legitimate requirement of a prospective recipient of data to know, to access, or to possess any sensitive information represented by this data.

Negative charge: The condition in which a body has more than the normal quantities of negative electrons; more negative electricity than an uncharged or neutral body.

negative feedback: Feeding a signal back to the input of an amplifier, or other circuit, that is proportional to the output signal, but having a phase that opposes the input signal.

Negative Quenching : Accelerated cooling in water or oil, from a temperature below the critical range.

negative sequence: A balanced set of three phase components which have the same magnitude, opposite sequence to the original unbalanced set, and phase angle differing from each other by 120°. The frequency is of course the same as the original unbalanced three phase system.

Negative Thermoic Heat Exchange: In shell molding, improving the mass surface ratio by simulating profile geometry of pattern or core cavity on the underside; will boost running temperature of high projections by 25 percent.

Negative : For sources, implies the terminal that has an excess of electrons. Also, can imply the polarity of a point in a circuit in respect to some other point.

NEMA: National Electrical Manufacturers Association. NEMA provides a forum for the standardization of electrical equipment and is located at 2101 L Street N.W., Washington, DC, 20037.

NEMA National Electrical Manufacturers Association: A non-profit trade association supported by the manufacturers of electrical apparatus and supplies in the US. NEMA promulgates standards to facilitate understanding between the manufacturers and users of electrical products.

NEMA Ratings: Standards which define a product, process or procedure taking several considerations into account nomenclature, composition, dimensions, construction, tolerances, safety, operational characteristics, quality, performance, electrical rating, testing, and the service for which it was intended. Prepared by the National Electrical Manufacturers Association (NEMA).

Neo-Contaminating Compound: A compounded material that will not leach ingredients so as to contaminate or degrade adjacent materials under given environmental conditions.

Neoprene: Trade name for polychloroprene, used for jacketing (SEE polychloroprene).

Neper: An electrical unit similar to decibel, used to express the ratio between two amounts of power existing at two distinct points. A neper is 8.686 decibels.

NERC: See North American Electric Reliability Corporation.

Nerf Wheel: Round foam wheel inserted into the core of a coil without an insert before the coil is put on the entry reel to support the inner laps of the coil.

Nert Gas: A British term applied to metal that is weak and ruptures easily under not working conditions.

Net (communications) . : An organization of stations capable of direct communications on a common channel or frequency.

Net actual interchange (electric): The algebraic sum of all metered interchange over all interconnections between two physically Adjacent Balancing Authority Areas. NERC definition

Net authentication.: See authentication, net.

Net call sign. : See call sign, net.

net capability : Maximum load carrying ability of the equipment, excluding station use.

Net cell shipments: Represents the difference between cell shipments and cell purchases.

Net control station. : A station designated to control traffic and enforce circuit discipline within a given net.

Net electricity consumption: Consumption of electricity computed as generation, plus imports, minus exports, minus transmission and distribution losses.

Net energy for load: Net generation of main generating units that are system-owned or system-operated, plus energy receipts minus energy deliveries.

Net energy for load (electric): Net Balancing Authority Area generation, plus energy received from other Balancing Authority Areas, less energy delivered to Balancing Authority Areas through interchange. It includes Balancing Authority Area losses but excludes energy required for storage at energy storage facilities. NERC definition

Net energy for system: The sum of energy an electric utility needs to satisfy their service areas, including full and partial requirements consumers.

Net generation: The amount of gross generation less the electrical energy consumed at the generating station(s) for station service or auxiliaries. Note Electricity required for pumping at pumped-storage plants is regarded as electricity for station service and is deducted from gross generation.

net generation : Gross generation minus the energy consumed at the generating station for its use.

Net head: The gross head minus all hydraulic losses except those chargeable to the turbine.

Net income: Operating income plus other income and extraordinary income less operating expenses, taxes, interest charges, other deductions, and extraordinary deductions.

Net interstate flow of electricity: The difference between the sum of electricity sales and losses within a state and the total amount of electricity generated within that state. A positive number indicates that more electricity (including associated losses) came into the state than went out of the state during the year; conversely, a negative number indicates that more electricity (including associated losses) went out of the state than came into the state.

Net module shipments: Represents the difference between module shipments and module purchases. When exported, incomplete modules and unencapsulated cells are also included.

Net operable capacity: Total owned capacity less in operable capacity.

Net photovoltaic module shipment: The difference between photovoltaic module shipments and photovoltaic module purchases.

Net profits interest: A contractual arrangement under which the beneficiary, in exchange for consideration paid, receives a stated percentage of the net profits. That type of arrangement is considered a nonoperating interest, as distinguished from a working interest, because it does not involve the rights and obligations of operating a mineral property (costs of exploration, development, and operation). The net profits interest does not bear any part of net losses.

Net Receipts: The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

Net summer capacity: The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30.) This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

Net winter capacity: The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of peak winter demand (period of December 1 through February 28). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

Net, directed. : A net in which no station other than the net control stations may communicate with any other station, except for transmission of urgent messages, without first obtaining the permission of the net control station.

Net, free. : A net in which any station may communicate with any other station in the same net without first obtaining permission from the net control station to do so.

Netback purchase: Refers to a crude oil purchase agreement wherein the price paid for the crude is determined by sales prices of the types of products that are derivable from that crude as well as other considerations (e.g., transportation and processing costs). Typically, the price is calculated based on product prices extant on or near the cargo's date of importation.

Network: An interconnection of computers, peripherals, and data/voice communications facilities.

Network (1). : A number of inter-related circuits.

network (2). : A circuit, or part of a circuit, containing a number of branches, which is considered as a unit.

Network (3). : A combination of elements.

Network (4). : An interconnection of computer systems, terminals or data communications facilities.

Network facilities. : (in a packet-switched network) standard facilities are divided into essential facilities (found on all networks) and additional facilities (selected for a given network but which may or may not be selected for other networks).

Network layer. : The third layer in the OSI model; responsible for addressing and routing between subnetworks.

Network security. : The protection of networks and their services from unauthorised modifications, destruction, or disclosure, providing an assurance that the network performs its critical functions correctly and there are no harmful side effects (ca).

Network Structure: A structure in which the crystals of one constituent are surrounded by envelopes of another constituent which gives a network appearance to an etched test specimen.

network synthesis: Finding a network that represents a given transfer function.

network : A system of transmission and distribution lines cross-connected and operated to permit multiple power supply to any principal point on it.

Network, teletypewriter. : A network of interconnected teletypewriter stations serving a command, service or nation.

Neumann Band: A mechanical (deformation) twin in ferrite.

neutral: The point common to all phases of a polyphase circuit, a conductor to that point, or the return conductor in a single phase circuit.

Neutral Conductor: In multiphase circuits, the conductor used to carry unbalanced current. In singlephase systems, the conductor used for a return current path.

Neutral Conductor: In multiphase circuits the conductor used to carry unbalanced current and in single phase systems the conductor used for a return current path.

neutral conductor : A conductor connected to the neutral point of a system and contributing

to the transmission of electrical energy. The term also means the equivalent conductor of an IT or d.c. system unless otherwise specified in the Regulations and also identifies either the mid wire of a three wire d.c. circuit or the earthed conductor of a two wire earthed d.c. circuit.

Neutral current loop. : Same as single-current version of current loop; in double-current version, the no-current condition is illegal and indicates a system failure.

Neutral Ground Reactor: A reactor used to connect the neutral point of a three phase system to ground. Neutral Ground Reactors are used to limit ground fault current on Neutral Grounded (WYE) systems.

Neutral Ground Reactor: Neutral Grounding Reactors are single phase units. They are installed at specific locations in the transmission network, particularly at the neutral of large power transformers and limit the line to ground fault current under system earth fault conditions to specified levels. The specification should also include unbalanced condition continuous current and duration. Neutral Grounding Reactors are preferred versus resistors due to much lower losses arising from the unbalance currents.

Neutral Grounding Resistor: A device that connects the neutral point of a three phase system to ground. Neutral Grounding Resistors are used to limit ground fault current on Neutral Grounded (WYE) systems.

Neutral network: The new processor technology which can share the information and perform many tasks simultaneously.

neutral point displacement voltage: The voltage between the real or virtual neutral point and the earth.

Neutral Refractories: A loose term designating refractories which presumably will not react with so call acid or basic refractories and slags.

Neutron: Elementary nuclear particle with a mass (1.00893 mass units) approximately the same as that of a hydrogen atom. It is electrically neutral.

Neutron: An uncharged elementary particle found in the nucleus of every atom except hydrogen. Solitary mobile neutrons traveling at various speeds originate from fission reactions. Slow (thermal) neutrons can in turn readily cause fission in nuclei of "fissile" isotopes, e.g., U-235, Pu-239, U-233; and fast neutrons can cause fission in nuclei of "fertile" isotopes such as U-238, Pu-239. Sometimes atomic nuclei simply capture neutrons.

New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont;

New field: A field discovered during the report year.

New field discoveries: The volumes of proved reserves of crude oil, natural gas, and/or natural gas liquids discovered in new fields during the report year.

New Jersey Sand: A large number of grades of foundry sands mined in southern New Jersey.

New reservoir: A reservoir discovered during the report year.

newton (N): SI unit of force. One newton is equal to the force required to accelerate a body with the mass one kilogram by one metre per second per second.

Next Standard Operation: Indicates the next process for which the coil is normally scheduled. An example of a Next Standard Operation for a Pickler would be a Tandem Mill.

NFFS: Non Ferrous Founder's Society

NFPA: Standard that provides guidance on implementing appropriate work practices that are required to safeguard workers from injury while working on or near exposed electrical

conductors or circuit parts that could become energized.

NFPA: (National Fire Protection Association) An organization devoted to promoting the science and improving the methods of fire protection.

NFPA 70E Standard: The National Fire Protection Association.

NGL: See Natural gas liquids.

NGPA: See Natural Gas Policy Act of 1978.

NGPL: Natural Gas Plant Liquids

NGV: Natural Gas Vehicle

Ni: Chemical symbol for Nickel

NIC: Network Interface Card is a device utilized by a computer to connect to a wired or wireless network.

Nickel Cadmium Battery: The assembly of one or more cells with an alkaline electrolyte, a positive electrode of nickel oxide and negative electrodes of cadmium.

Nickel Cadmium Battery: The rechargeable batteries having nickel oxide hydroxide and metallic cadmium as electrodes.

Nickel Silver: Copper base alloys that contain 10 45% Zn. and 5 30% Ni.

Nickel Steel: Steel containing nickel as an alloying element. Varying amounts are added to increase the strength in the normalized condition to enable hardening to be performed in oil or air instead of water.

Nickname. : Two short separate words which may be formally or informally assigned by an appropriate authority to an event, project, activity, placename, topographical feature, or item of equipment for convenience of reference but not for the security of information.

Night effect. : An effect mainly caused by variations in the state of polarization of reflected waves, which sometimes result in errors in df bearings. The effect is most frequent at nightfall.

Nil return/no change report. : Terminology used, particularly in respect of status reports, to indicate that there has been no alteration.

Nine Inch Equivalent: Standard unit of volume in refractories industries; 9x4 1/2, 2 1/2 in brick.

Niobium: (Chemical symbol Nb) Element No. 41 of the periodic system. See Columbium

Nipple: A short length of pipe. May be threaded or plain end.

Nisa: National Industrial Sand Association

Nital: A solution of nitric acid in alcohol use as an etching agent in ferrous metallography.

Nitriding Steel: Steel which is particularly suited for the nitriding process, that is, it will form a very hard and adherent surface upon proper nitriding (heating in a partially dissociated atmosphere of ammonia gas). Composition usually .20 .40 carbon, .90 1.50 chromium, .15 1.00 molybdenum, and .85 1.20% aluminum.

Nitrogen Back Up Air: A back up air supply for # 6 Turbo Blower.

Nitrogen dioxide: A compound of nitrogen and oxygen formed by the oxidation of nitric oxide (NO) which is produced by the combustion of solid fuels.

Nitrogen Flush: Bubbling nitrogen gas through a metal melt under vacuum (as with valve bronze) to improve tensile properties and pressure tightness.

Nitrogen oxides (NO: xCompounds of nitrogen and oxygen produced by the burning of fossil fuels.

Nitrous oxide (N: 2A) colorless gas, naturally occurring in the atmosphere. Nitrous oxide has a 100-year Global Warming Potential of 310.

NM: Non-metallic sheathed cable, braid or plastic covered. For dry use, 90°C conductor rating, 60°C ampacity.

Nm nanometre (10-9m). : A metric measure of length used for measuring the wavelengths of visible light, gamma rays and ultraviolet radiation.

NMC: Non-metallic sheathed cable, plastic or neoprene covered. Wet or dry use, 90°C conductor rating, 60°C ampacity.

No Load Loss: See "Core Loss".

No. 1 Diesel Fuel: A light distillate fuel oil that has distillation temperatures of 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines, such as those in city buses and similar vehicles. See No. 1 Distillate.

No. 1 diesel fuel: A light distillate fuel oil that has a distillation temperature of 550 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high speed diesel engines generally operated under frequent speed and load changes, such as those in city buses and similar vehicles. See No. 1 distillate.

No. 1 distillate: A light petroleum distillate that can be used as either a diesel fuel (see No. 1 diesel fuel) or a fuel oil (see No. 1 fuel oil).

No. 1 fuel oil: A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters. See No. 1 Distillate.

No. 1 Fuel Oil : A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters. See No. 1 Distillate.

No. 2 Diesel Fuel: A distillate fuel oil that has a distillation temperature of 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines that are generally operated under uniform speed and load conditions, such as those in railroad locomotives, trucks, and automobiles. See No. 2 Distillate.

No. 2 diesel fuel: A fuel that has a distillation temperature of 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines, such as those in railroad locomotives, trucks, and automobiles. See No. 2 Distillate.

No. 2 distillate: A petroleum distillate that can be used as either a diesel fuel (see No. 2 diesel fuel) or a fuel oil (see No. 2 fuel oil).

No. 2 fuel oil (heating oil): A distillate fuel oil that has a distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. See No. 2 Distillate.

No. 2 fuel oil (heating oil) : A distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. See No. 2 Distillate.

No. 2 fuel oil and No. 2 diesel sold to consumers for all other end uses: Those consumers who purchase fuel oil or diesel fuel for their own use including commercial/institutional buildings (including apartment buildings), manufacturing and nonmanufacturing establishments, farms (including farm houses), motor vehicles, commercial or private boats, military, governments, electric utilities, railroads, construction, logging or any other nonresidential end-use purpose.

No. 2 fuel oil sold to private homes for heating: Private household customers who purchase fuel oil for the specific purpose of heating their home, water heating, cooking, etc., excluding farm houses, farming and apartment buildings.

No. 4 Diesel Fuel and No. 4 Fuel Oil: See No. 4 Fuel.

No. 4 fuel oil: A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It conforms with ASTM Specification D 396 or Federal Specification VV-F-815C and is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities. It also includes No. 4 diesel fuel used for low- and medium-speed diesel engines and conforms to ASTM Specification D 975.

No. 5 Residual fuel oil: A residual fuel oil of medium viscosity, used in steam-powered vessels in government service and power plants, which is also known as “Navy Special” and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). See residual fuel oil.

No. 6 Residual fuel oil: Includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. See residual fuel oil.

NOAA: National Oceanic and Atmospheric Administration.

NOAA division: One of the 345 weather divisions designated by the National Oceanic and Atmospheric Administration (NOAA) encompassing the 48 contiguous states. These divisions usually follow county borders to encompass counties with similar weather conditions. The NOAA division does not follow county borders when weather conditions vary considerably within a county; such is likely to happen when the county borders the ocean or contains high mountains. A state contains an average of seven NOAA divisions; a NOAA division contains an average of nine counties.

Nobake Binder: A synthetic liquid resin sand binder that hardens completely at room temperature, generally not requiring baking, used in Cold Setting process.

Nobel Metal : Metallic elements with surfaces that do not readily oxidize in air; e.g., gold, silver, platinum.

nodal analysis: A method of analysis of circuits based on defining node voltages as the variables.

node: point of connection between two or more elements or branches in a network.

Node (1). : (in general) a point of interconnection to a network.

Node (2). : (in multipoint networks) a unit that is polled.

Node (3). : (in lan technology) a unit on a ring; often used as a synonym for station.

node (4). : (in packet-switched networks) one of the switches forming the network's backbone.

Nodular Fireclay : Rock containing aluminous or ferrogenous nodules, or both, bonded by fireclay.

Nodular Graphite: Graphite or carbon in modular form, characteristically in malleable and nodular iron.

Nodular Iron: Iron of a normally gray cast iron type that has been suitably treated with a nodularizing agent so that all or the major portion of its graphitic carbon has a nodular or spherulitic form as cast. Often referred to as Ductile Iron.

Nodular Pearlite: Pearlite that has grown as a colony with an approximately spherical morphology.

Noise: Any undesirable electrical signal, from external sources such as ac power lines, motors, electrical storms, and radio transmitters, as well as internal source such as electrical components.

noise: An unwanted random signal (in the form of a voltage or current) in an electrical circuit making the information more difficult to identify.

Noise jamming. : Electronic jamming in which the carrier wave is modulated by noise, or in which noise at the desired output frequencies is amplified and radiated without a carrier.

Noise level. : The noise power density spectrum in the frequency range of interest.

Noise modulation. : The process of using random noise to modulate a carrier frequency.

Noise power density.: The noise power per unit bandwidth. The product of boltzmann's constant and system noise temperature.

Noise Radiator: A device creating noise.

Noise Spectrum: The various frequencies making a noise.

Noise temperature, equivalent satellite link. : The noise temperature referred to the output of the receiving antenna of the earth station corresponding to the radio frequency noise power which produces the total observed noise at the output of the satellite link excluding noise due to interference coming from satellite links using other satellites and from terrestrial systems.

Noise. : Random electrical signals, generated by circuit components or by natural disturbances, that corrupt the data by introducing errors.

No-load loss: Power and energy lost by an electric system when not operating under demand.

Nominal: unadjusted rate, change in value

Nominal (NOM): The preferred size or weight that is specified or indicated for a certain cable element.

Nominal Capacity (Battery): A designation by the battery manufacturer which helps identify a particular cell model and also provides an approximation of capacity. It is normally expressed in amperehours at a given discharge current.

Nominal dollars: A measure used to express nominal price.

Nominal price: The price paid for a product or service at the time of the transaction. Nominal prices are those that have not been adjusted to remove the effect of changes in the purchasing power of the dollar; they reflect buying power in the year in which the transaction occurred.

nominal voltage: A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage rating. The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

Nominal Voltage (Battery): Voltage of a fully charged cell or battery when delivering rated capacity at a specific discharge rate. The nominal voltage per cell is 2V for Lead Acid, 1.2V for NickelCadmium, 1.2V for Nickel Metal Hydride and 3.9V for Lithium Ion (small cells only).

Nominal Voltage : A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class.

Nominal : The normal operating value.

Nomogram (Graph): A graph that enables one by the aid of a straight edge to read off the value of a dependent variable when the value of two or more independent variables are given.

Non Aging: Little to no change in mechanical and physical properties over time; Yield point elongation is zero. See Aging.

Non Destructive Testing: Non-destructive testing is an engineering service usually associated with failure analysis. Non-destructive methods include the use of ultrasonic sensors, radiographic measurements and liquid penetrants for visual inspection. See Engineering Services - Failure Analysis

Non Ferrous Founders' Society: See Non Ferrous Founder's Society for address information.

Non Ferrous Metals: Metals or alloys that are free of iron or comparatively so.

Non Heat Treatable Alloy: An alloy which can be strengthened only by cold work

Non Magnetic Steels: Austenitic steels such as the 14% manganese steels and the 303 type 18/8% chromium nickel stainless steels.

Non Metallic Inclusions: Impurities (commonly oxides), sulphides, silicates or similar substances held in metals mechanically during solidification or formed by reactions in the solid state.

Non Refractory Alloy: A term opposed to refractory alloy. A non refractory alloy has malleability, that is, ease of flattening when subjected to rolling or hammering.

Non Return: A flapper check valve at the boiler steam exit that is used to isolate a down boiler and to prevent steam feedback during outage emergencies.

Non Return Valve: Check valve located at the boiler steam exit which is used to isolate a down boiler and to prevent steam feedback during emergencies.

Non Scalloping Quality Strip Steel: Strip steel ordered or sold on the basis of absence of unevenness, or ears, on the edges of the steel, when subjected to deep drawing.

Non Temper Passed Bands: Hot bands.

Nonassociated natural gas: Natural gas that is not in contact with significant quantities of crude oil in the reservoir. See natural gas.

Nonattainment area: Any area that does not meet the national primary or secondary ambient air quality standard established by the Environmental Protection Agency for designated pollutants, such as carbon monoxide and ozone.

Non-biomass waste: Material of non-biological origin that is a byproduct or a discarded product. "Non-biomass waste" includes municipal solid waste from non-biogenic sources, such as plastics, and tire-derived fuels.

Nonbranded product: Any refined petroleum product that is not a branded product.

Noncoincident demand: Sum of two or more demands on individual systems that do not occur in the same demand interval.

Noncoincidental peak load: The sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only when considering loads within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than 1 year.

non-coincidental peak load : The sum of two or more peak loads on individual systems, not occurring in the same time period.

Nonconventional plant (uranium): A facility engineered and built principally for processing of uraniferous solutions that are produced during in situ leach mining, from heap leaching, or in the manufacture of other commodities, and the recovery, by chemical treatment in the plant's circuits, of uranium from the processing solutions.

Non-cutoff (Lighting): Luminaire light distribution is classified as noncutoff when there is no candlepower limitation in the zone above max candlepower.

Nondedicated vehicle: A motor vehicle capable of operating on an alternative fuel and /or on either gasoline or diesel.

Nonfill: Failure of metal to fill a forging die impression.

Nonfirm power: Power or power-producing capacity supplied or available under a commitment having limited or no assured availability.

non-firm power : Power supplied or available under terms with limited or no assured availability.

Nonfuel components: Components that are not associated with a particular fuel. These include, but are not limited to, control spiders, burnable poison rod assemblies, control rod elements, thimble plugs, fission chambers, primary and secondary neutron sources, and BWR (boiling water reactor) channels.

Nonfuel use (of energy): Use of energy as feedstock or raw material input.

Nonfungible product: A gasoline blend or blendstock that cannot be shipped via existing petroleum product distribution systems because of incompatibility problems.

Gasoline/ethanol blends, for example, are contaminated by water that is typically present in petroleum product distribution systems.

Non-Halogen Ethylene Copolymers: NonHalogen Ethylene Copolymers combine attributes of polyethylene and polypropylene to produce cable insulating and jacketing compounds with superior fire protection. Unlike other ethylene compounds, these do not contain chemicals from the Halogen group

Nonhydrocarbon gases: Typical nonhydrocarbon gases that may be present in reservoir natural gas, such as carbondioxide, helium, hydrogen sulfide, and nitrogen.

Noninductive Circuit: A circuit in which the magnetic effect of the current flowing has been reduced by one several methods to a minimum or to zero.

non-inductive load: A non-inductive load is a load in which the current is in phase with the voltage across the load. (See Inductive Load)

Non-Inductive Load and Inductive Load: A non-inductive load is a load in which the current is in phase with the voltage across the load. An inductive load is a load in which the current lags behind the voltage across the load.

Nonlinear: A circuit or component whose output versus input graph is not a straight line.

Nonlinear Load: A load where the wave shape of the steady state current does not follow the wave shape of the applied voltage.

non-linear : A characteristic which does not follow a straight line.

Non-linearity: The error defined by the maximum deviation of measured output from a best fit straight line during any one calibration cycle.

Non-Load break: Refers to a group of rubber insulating products that cannot be separated under load. Also see Loadbreak.

Nonmetallic Sheathed Cable: A cable assembly consisting of individually insulated conductors, jacketed, or sheathed, with a nonmetallic material. The material usually consists of PVC or polyethylene.

Nonmethane volatile organic compounds (NMVOC): Organic compounds, other than methane, that participate in atmospheric photochemical reactions.

Nonoperating interest: Any mineral lease interest (e.g., royalty, production payment, net profits interest) that does not involve the rights and obligations of operating a mineral property.

Non-orthogonal. : An antenna support structure drive method whereby the two axis of rotation are not at right angles, i.e. Any changes in elevation bearing results in compensatory movement in the azimuth and elevation axis.

Non-persistent. : (in lan technology) a term used to describe a csma lan in which the stations involved in a collision do not try to retransmit immediately - even if the network is quiet. Compare with persistent and p-persistent.

Nonproducing reservoir: Reservoir in which oil and/or gas proved reserves have been identified, but which did not produce during the report year to the owned or contracted interest of the reporting company regardless of the availability and/or operation of production, gathering, or transportation facilities.

Nonreflow Plate: (MATTE) Does not get reflowed to melt the Tin coating.

Nonrenewable fuels: Fuels that cannot be easily made or "renewed," such as oil, natural gas, and coal.

Nonrenewable fuels: Fuels that cannot be easily made or "renewed." We can use up nonrenewable fuels. Oil, natural gas, and coal are nonrenewable fuels.

Non-Renewable Fuse: An enclosed fuse with a link which cannot be replaced after operation. This fuse contains an arc quenching filter.

Non-repeatability: The error defined by the ability of a transducer to reproduce an output signal when the same pressure value is applied to it consecutively, under the same conditions, and in the same direction.

Non-repudiation. : The ability to prove the identity of the sender and receiver of an electronic transmission, as well as to verify the transmission and receipt of the message, so that the parties cannot claim not to have sent or received the transmission. Digital signatures are the current non-repudiation technique of choice for the cceb.

Nonrequirements consumer: A wholesale consumer (unlike a full or partial requirements consumer) that purchases economic or coordination power to supplement their own or another system's energy needs.

Nonresidential building: A building used for some purpose other than residential.

Nonresidential buildings comprise three groups commercial, manufacturing/industrial, and agricultural.

Nonroad alternative fuel vehicle (nonroad AFV): An alternative fuel vehicle designed for

off-road operation and use for surface/air transportation, industrial, or commercial purposes. Nonroad AFVs include forklifts and other industrial vehicles, rail locomotives, self-propelled electric rail cars, aircraft, airport service vehicles, construction vehicles, agricultural vehicles, and marine vessels. Recreational AFVs (golf carts, snow mobiles, pleasure watercraft, etc.) are excluded from the definition.

Nonspinning reserve: The generating capacity not currently running but capable of being connected to the bus and load within a specified time.

Nonutility generation: Electric generation by end-users, or small power producers under the Public Utility Regulatory Policies Act, to supply electric power for industrial, commercial, and military operations, or sales to electric utilities.

non-utility generator : Independent power producers, exempt wholesale generators and other companies in the power generation business that have been exempted from traditional utility regulation.

Nonutility power producer: A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for electric generation and is not an electric utility. Nonutility power producers include qualifying cogenerators, qualifying small power producers, and other nonutility generators (including independent power producers). Non-utility power producers are without a designated franchised service area and do not file forms listed in the Code of Federal Regulations, Title 18, Part 141

non-utility power producer : A legal entity that owns electric generating capacity, but it not an electric utility.

Nonvolatile Memory: The computer memory which is capable to store the memory in even case of power cycle means after shut down of the system.

Nonvolatile. : A term used to describe a data storage device (memory) that retains its contents when power is lost.

NOPR: Notice of Proposed Rulemaking

NOR gate or logic: Stands for NOT-OR. Gives an inverted output of OR logic.

NOR gate : A logic circuit that outputs a 1 only when each one of its inputs is a 0.

Nordel®: DuPont trademark for FPDM synthetic rubber.

Normal butane (C: 410A) straight-chain saturated (paraffinic) hydrocarbon extracted from both natural gas and refinery gas streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 31 degrees Fahrenheit.

Normal Steel: Steel in which the pearlite is completely laminated.

Normally Closed (N.C.): Current flow through the switching device is possible only when the device is in the off-state or energized.

Normally Closed (N.C.) Output: The sensor opens a circuit to the load when a target is detected.

Normally Open (N.O.): Current flow through the device is not possible when the device is deenergized (turned-off).

Normally Open (N.O.) Output: The sensor closes a circuit to the load when a target is detected.

normally open and normally closed: The terms "Normally Open" and "Normally Closed" are applied to a magnetically operated switching device (such as a contactor or relay, or to the contacts thereof) to signify the position taken when the operating magnet is de-energized.

normal-mode noise: noise signal which appears between a set of phase conductors.

Normal-Mode Rejection Ratio: The ability of an instrument to reject electrical interference across its input terminals, normally of line frequency(50-60 Hz).

North American Electric Reliability Corporation (NERC): A nonprofit corporation formed in 2006 as the successor to the North American Electric Reliability Council established to develop and maintain mandatory reliability standards for the bulk electric system, with the fundamental goal of maintaining and improving the reliability of that system. NERC consists of regional reliability entities covering the interconnected power regions of the contiguous United States, Canada, and Mexico. See the North American Electric Reliability Corporation (NERC) Regions.

North American Industry Classification System (NAICS): A new classification scheme, developed by the Office of Management and Budget to replace the Standard Industrial Classification (SIC) System, that categorizes establishments according to the types of production processes they primarily use.

Northeast: Northeast Region New England division and Middle Atlantic division

Northern: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Northern Appalachian Region: Consists of Maryland, Ohio, Pennsylvania, and Northern West Virginia.

North-seeking pole: That pole of a magnetic which points to the earth's north pole when free to turn.

Norton's theorem: A method of reducing a complex network of bilateral (conducts equally well in both directions) components to one current source and one shunt resistance across the load terminals.

norton's theorem: States that a linear two-terminal circuit can be replaced by an equivalent circuit consisting of an equivalent current source and a shunt equivalent admittance.

NOT circuit : A logic circuit that inverts its only input.

Notam (notice to airmen). : A notice, containing information concerning the establishment, condition or change in any aeronautical facility, service, procedures or hazard. The timely knowledge of which is essential to personnel concerned with flight operations.

Notch Bar: A test specimen which is notched. Used in impact or fatigue tests.

Notched Bar Test: A test to determine the resistance of a material to a suddenly applied stress, i.e. shock. A notched test piece is employed in an Izod or Charpy machine and the results are recorded in ft, lbs or Joules.

Notching Relay: A relay which switches in response to a specific number of applied impulses.

Notching Relay: the resistance controlled relays provided to monitor rise and fall of current values . It work in case of specified impulse values.

Notes. : (1). The amplitude modulation comprises two components on harmonically related frequencies providing course and fine bearing accuracy. Reference signals for phase measurements are provided by marker pulses transmitted by the beacon when its radiation pattern has particular orientations.(2). When not interrogated random pulses as well as the markers are transmitted by the beacon which thus continues to provide a directional beacon service.

Nozzle Brick: A thick walled tubular refractory shape set in bottom of a ladle through which steel is teemed.

Nozzle Pocket Brick: A refractory shape set in bottom of a ladle containing a recess in which nozzle is set.

NPN (sinking): A transistor having an n-type semiconductor as its emitter and collector and a p-type semiconductor as its base.

NPS: Negative Phase Sequence

NRHW: Moisture and heat-resistant rubber insulation with neoprene jacket for use in ducts. Dry and wet locations, 600V, 75°C. Also RHWN.

Nrzi, non-return to zero inverted. : (in sdlc) a binary encoding technique in which a change in state represents a binary 0 and no change in state represents a binary 1. Also known as invert-on-zero coding.

ntn, network terminal number. : Number identifying the logical location of a dte connected to a network; the ntn may contain a sub-address used by the dte rather than by the network to identify equipment or circuits attached to it. The ntn can be up to 10 digits long.

NTP: Normal temperature and pressure reference point; zero centigrade 760mm mercury pressure.

NTP, Normal temperature and pressure: condition. Normal temperature may be taken as 0oC (physics) or 20oC (engineering) while normal pressure is taken as 760 torr.

N-type semiconductor: A semiconductor produced by doping an intrinsic semiconductor with an electron-donor impurity (e.g., phosphorous in silicon).

Nuclear electric power (nuclear power): Electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.

nuclear energy: Energy produced in the form of heat during the fission process in a nuclear reactor. When released in sufficient and controlled quantity, this heat energy may be used to produce steam to drive a turbine-generator and thus be converted to electrical energy.

Nuclear energy: Energy that comes from splitting atoms of radioactive materials, such as uranium.

nuclear fission: A nuclear reaction in which a heavy atomic nucleus splits into two parts, and at the same time emitting neutrons and releasing very large amounts of nuclear energy.

Nuclear fuel: Fissionable materials that have been enriched to such a composition that, when placed in a nuclear reactor, will support a self-sustaining fission chain reaction, producing heat in a controlled manner for process use.

nuclear fuel: Fissionable materials that have been enriched to such a composition that, when placed in a nuclear reactor, will support a self-sustaining fission chain reaction, producing heat in a controlled manner for process use.

nuclear fusion: A nuclear reaction between light atomic nuclei as a result of which a heavier nucleus is formed and a large quantity of nuclear energy is released.

nuclear power: power released in exothermic (a reaction which gives off heat) nuclear reactions which can be converted to electric power by means of heat transformation equipment and a turbine-generator unit.

nuclear power plant: A facility in which heat produced in a reactor by the fissioning of nuclear fuel is used to drive a steam turbine.

Nuclear reactor: An apparatus in which a nuclear fission chain reaction can be initiated,

controlled, and sustained at a specific rate. A reactor includes fuel (fissionable material), moderating material to control the rate of fission, a heavy-walled pressure vessel to house reactor components, shielding to protect personnel, a system to conduct heat away from the reactor, and instrumentation for monitoring and controlling the reactor's systems.

Nuclear reactor: A device in which a nuclear fission chain reaction occurs under controlled conditions so that the heat yield can be harnessed or the neutron beams utilized. All commercial reactors are thermal reactors, using a moderator to slow down the neutrons.

Nucleation: 1) (homogeneous) the initiation of solid crystals from the liquid stage, or initiation of solid crystals from the liquid stage, or a new phase within a solid without outside interference rarely occurs, 2) heterogeneous) foreign particles altering the liquid solid interface energy during phase changes.

Nucleus: (1) The first structurally stable particle capable of initiating recrystallization of a phase or the growth of a new phase, and separated from the matrix by an interface. (2) The heavy central core of an atom, in which most of the mass and the total positive electrical charge are concentrated.

Nue: Non upset end ? OCTG tubing description (not as common as EUE)

NUG: Nonutility Generator

Nui, network user identification. : (in x25 packet-switched networks) a combination of the network user's address and the corresponding password; replaces the ntn in newer networks.

Null: The position of a device that is its normal or otherwise preset 'zero' condition.

Null character. : A character (with all bits set to mark) used to allow time for a printer's mechanical actions, such as return of carriage and for feeding, so that the printer will be ready to print the next data character. Same as idle character.

Null modem. : Same as modem eliminator.

Number of mines: The number of mines, or mines collocated with preparation plants or tipples, located in a particular geographic area (State or region). If a mine is mining coal across two counties within a State, or across two States, then it is counted as two operations. This is done so that EIA can separate production by State and county.

Number of mining operations: The number of mining operations includes preparation plants with greater than 5,000 total direct labor hours. Mining operations that consist of a mine and preparation plant, or a preparation plant only, will be counted as two operations if the preparation plant processes both underground and surface coal. Excluded are silt, culm, refuse bank, slurry dam, and dredge operations except for Pennsylvania anthracite. Excludes mines producing less than 10,000 short tons of coal during the year.

Number tab (message relay). : A sequential channel number perforated on tape.

Number, open (message relay). : A channel serial for which a transmission bearing a corresponding number has not been received.

Number, originator's reference. : The number assigned to a message by an originator to provide a means of reference.

number, station serial. : A message reference number assigned within a commcen. It will normally consist only of a number allotted in sequence. However, in those instances where station serial numbers are allotted at more than one position, as prescribed by in-station procedure, a single letter designator follows each number e.g. 107a, 119b.

NURE: See National Uranium Resource Evaluation

NVD neutral voltage displacement: -A technique to measure the displacement of the neutral voltage with respect to earth.

NY Quist Theorem: Law of sampling theory stating that data sampling frequency should be at least twice that of the highest frequency variations in the signal of interest. Must be observed to preserve patterns in data and do not introduce artificial, lower frequency patterns.

Nylon: For Wire and Cable applications, Nylon, a thermoplastic compound, is used exclusively as a jacketing material. Nylon Jackets provide the insulation system a high degree of mechanical and chemical protection.

Nymex: New York Mercantile Exchange

O Ring: A seal, made from rubber or other synthetic material in the shape of a circle and of circular or other polygonal cross section.

O&M: Operation and Maintenance.

O3: See Ozone.

OA: OilAir, a cooling classification for transformers now classified as ONAN. Oil type, Natural convection flow through cooling equipment and in windings, & Air external cooling medium.

OAW: Overall width.

Object method. : An action that can be invoked on a resource (e.g. A file system may have read, write and execute object methods)

obligation to serve : The obligation of a utility to provide electric service to any consumer who seeks that service, and is willing to pay the rates set for that service.

Occasional Traffic: Refers to a grade level Reinforced Polymer Concrete or Fiberglass Reinforced Plastic Box or Cover load rating of 20,800lbs. This rating is derived from double wheel loading of 16,000 lbs with an impact factor of 30% added (16000 x 1.30). Application is

Occlusion : A term applied in the case of metals to the absorption or entrapment of gases.

Occupancy sensors: These are also known as "ultrasonic switchers." When movement is detected, the lights are turned on and remain on as long as there is movement in the room.

Ocean energy systems: Energy conversion technologies that harness the energy in tides, waves, and thermal gradients in the oceans.

Ocean thermal energy conversion (OTEC): The process or technologies for producing energy by harnessing the temperature differences (thermal gradients) between ocean surface waters and that of ocean depths. Warm surface water is pumped through an evaporator containing a working fluid in a closed Rankine-cycle system. The vaporized fluid drives a turbine/generator.

OCS: See Outer Continental Shelf.

octal: A group of 8 symbols from 0 to 7.

Octane: A flammable liquid hydrocarbon found in petroleum. Used as a standard to measure the anti-knock properties of motor fuel.

Octane rating: A number used to indicate gasoline's antiknock performance in motor vehicle engines. The two recognized laboratory engine test methods for determining the antiknock rating, i.e., octane rating, of gasolines are the Research method and the Motor method. To provide a single number as guidance to the consumer, the antiknock index $(R + M)/2$, which is the average of the Research and Motor octane numbers, was developed.

Octet. : (in packet-switched networks) a grouping of 8 bits; similar but not identical to byte.

OCTG: includes casing, drill pipe and oil well tubing, which, depending on their use, may be formed through welded or seamless processes.

OD: Outside diameter

odd symmetry or odd function: A function has odd symmetry when its plot is anti-symmetrical about the vertical axis. $f(t) = -f(-t)$

Oddsides: Semi permanent molds of plaster of paris, graphite, or dry sand, tarred and dried and used for repetitive work in the foundry.

OECD: See Organization for Economic Cooperation and Development.

OEM: See Original Equipment Manufacturer(s).

oerstead Oe : An old unit of magnetic field in the c.g.s. system. $1 \text{ Oe} = 7.958 \times 10^{-1} \text{ A/m}$

Off Center: Not centered; offset, eccentric or inaccurate.

Off Dimension: A casting defect caused by any incorrect dimension resulting from improper setting of cores, using wrong core, shifts, swells, etc.

Off Gauge: Core defect caused by improper gagging of dimensions.

Off Gauge Reel: Reel onto which all the off gauge and defective material is wound.

Off Grade Metal: Metal whose composition does not correspond to the designated or applicable specification.

Off hook. : (in telephone environment) activated; by extension, a modem automatically answering a call on the dial network is said to go "off hook".

Off Iron: Pig iron not of the desired composition.

Off Line: Term that means a boiler or system is not in use

Off peak: Period of relatively low system demand. These periods often occur in daily, weekly, and seasonal patterns; these off-peak periods differ for each individual electric utility.

Off peak gas: Gas that is to be delivered and taken on demand when demand is not at its peak.

Off Peak Power: Power supplied during designated periods of low power system demand.

Off Size: Rolled steel too light or too heavy to meet requirements.

OFF-delay: Allows an output signal to continue for a present time beyond the end of the input signal.

Off-highway use: Includes petroleum products sales for use in

Off-hours equipment reduction: A conservation feature where there is a change in the temperature setting or reduction in the use of heating, cooling, domestic hot water heating, lighting or any other equipment either manually or automatically.

Office automation. : A term used to describe the process of making wide use of the latest data processing and data communications technology - electronic mail, work processing, file and peripheral sharing and electronic publishing - in the office environment, usually involving the installation of lan.

off-line cipher. : A method of operation in which the processes of encryption and transmission (or reception and decryption) are performed in separate steps rather than automatically and simultaneously.

Off-line operation (cryptographic). : Encryption and decryption performed as a self-contained operation distinct from the transmission of the encrypted text, as by hand or by equipment not electrically connected to a single line.

off-line UPS: An uninterruptible power supply (UPS) which feeds power to the load directly

from the utility and then transfers to battery power via an inverter after utility drops below a specified voltage. The delay between utility power loss and inverter startup can be long enough to disrupt the operation of some sensitive loads.

Off-Load Tap Changer: A tap changer that is not designed for operation while the transformer is supplying load.

off-peak : Periods of relatively low system demands.

Offset Dial: Device used on #4 Side Trimmer askania. Movement of this dial changes the tracking of the line.

Offsetting: A coating defect consisting of a transference of smearing of ink or coating or other substance from the surface of one sheet of coated substrate to the back of the next sheet in a stack.

Offshore: That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water. If a state agency uses a different basis for classifying onshore and offshore areas, the state classification should be used (e.g., Cook Inlet in Alaska is classified as offshore; for Louisiana, the coastline is defined as the Chapman Line, as modified by subsequent adjudication).

Offshore reserves and production: Unless otherwise dedicated, reserves and production that are in either state or Federal domains, located seaward of the coastline.

Offsite-produced energy for heat, power, and electricity generation: This measure of energy consumption, which is equivalent to purchased energy includes energy produced off-site and consumed onsite. It excludes energy produced and consumed onsite, energy used as raw material input, and electricity losses.

Off-system: Any point not on or directly interconnected with a transportation, storage, and/or distribution system operated by a natural gas company within a state.

Offsystem (natural gas): Natural gas that is transported to the end user by the company making final delivery of the gas to the end user. The end user purchases the gas from another company, such as a producer or marketer, not from the delivering company (typically a local distribution company or a pipeline company).

OHL: Overhead Line

Ohm: A measure of the electrical resistance of a material equal to the resistance of a circuit in which the potential difference of 1 volt produces a current of 1 ampere.

Ohm: A unit of electrical resistance defined as the resistance of a circuit with a voltage of one volt and a current flow of one ampere.

Ohm: The derived SI unit for electrical resistance or impedance; one ohm equals one volt per ampere.

Ohm: The ohm is the SI derived unit of electrical resistance.(symbol: Ω)

OHM: Unit of electrical resistance.

Ohm: A unit of electrical resistance, the resistance of a circuit in which a potential difference of one volt produces a current of one ampere.

Ohm (S): The unit of measurement for resistance. Named for Georg Simon Ohm, the German physicist noted for his contributions to mathematics, acoustics, and the measurement of electrical resistance. One ohm is that resistance that limits the current to one ampere when a potential of one volt exist across its terminals.

Ohm's Law: the ratio of potential difference (V) between any two points on a conductor to the current (I) flowing between them is constant, provided the temperature of the conductor does not change. $V/I=R$

ohm, W: SI unit of electric resistance. One ohm is equal to the electric resistance between two points of a conductor when a constant potential difference of 1 V, applied to these points, produces in the conductor a current of 1 A, the conductor not being the seat of any electromotive force.

Ohm's law: Very basic circuit law that defines the relationships between current, voltage, and resistance in a DC circuit. Ohm's law states that current is directly proportional to voltage and inversely proportional to resistance. ($I = V/R$) The other forms of the formula are $V = IR$ and $R = V/I$.

Ohmmeter: An instrument for measuring resistance.

Ohmmeter: an instrument for measuring resistance in ohms.

ohmmeter : A device for measuring electrical resistance directly in ohm.

Ohm-pound/mile: A unit of weight resistivity expressing the resistance of a wire one pound in weight and one mile in length.

Ohm's Law: In a given electrical circuit, the amount of current in amperes is equal to the pressure in volts divided by the resistance, in ohms. The principle is named after the German scientist Georg Simon Ohm.

Ohm's Law: $E=IR$; $I=E/R$; $R=E/I$; Where E = Voltage impressed on a circuit, I = current flowing in a circuit and R = circuit resistance. Ohm's Law is used for calculating voltage drop, fault current and other characteristics of an electrical circuit.

ohm's law: States that the voltage across a resistor is directly proportional to the current flowing through the resistance.

Ohm's Law: The relationship between voltage, current and resistance, expressed by the equation $E=IR$, where E is the voltage in volts, I is the current in amperes, and R is the resistance in ohms.

Oil: A mixture of hydrocarbons usually existing in the liquid state in natural underground pools or reservoirs. Gas is often found in association with oil. Also see Petroleum.

Oil: A black liquid fossil fuel found deep in the Earth. Gasoline and most plastics are made from oil.

Oil And Whiting Test: A method of detecting fine cracks by applying a penetrating oil and painting the tested metal surface with a mixture of whiting and a thinner. Oil in the cracks emerges to stain the whiting.

Oil Breakers: A type of high voltage circuit breaker using mineral oil as both an insulator and an interrupting medium. Typically, these units were produced for use at voltages from 35 kV to as much as 345 kV. Generally, these are older types and no longer produced for

Oil Circuit Breaker: A circuit breaker arranged to interrupt one or more electric circuits in oil.

Oil Circuit Breakers: Oil circuit breakers are used to switch circuits and equipment in and out of a system in a substation. They are oil filled to provide cooling and to prevent arcing when the switch is activated.

Oil company use: Includes sales to drilling companies, pipelines or other related oil companies not engaged in the selling of petroleum products. Includes fuel oil that was

purchased or produced and used by company facilities for the operation of drilling equipment, other field or refinery operations, and space heating at petroleum refineries, pipeline companies, and oil-drilling companies. Oil used to bunker vessels is counted under vessel bunkering. Sales to other oil companies for field use are included, but sales for use as refinery charging stocks are excluded.

Oil Cooler: Water cooled heat exchanger used to maintain the oil temperature on the feedwater pumps.

Oil Core Or Mold: A core or mold in which the sand is bonded by an oil binder.

Oil Country Tubular Goods (Octg): Label applied to the pipe products used by petroleum exploration customers.

Oil Film Weight: Measure of the amount of oil applied to a flat rolled steel product; for Tin Mill Products, the measure is grams/base box; for Sheet Products, the measure is oz./sq.ft. (or gm./sq.m.).

Oil Hardening: A process of hardening a ferrous alloy of suitable composition by heating within or above the transformation range and quenching in oil.

Oil Hardening Steel: Used to describe tool or alloy steels where oil is used as the quenching medium in the hardening process.

Oil reservoir: An underground pool of liquid consisting of hydrocarbons, sulfur, oxygen, and nitrogen trapped within a geological formation and protected from evaporation by the overlying mineral strata.

Oil Sample: A small amount (at least 50 ml) of oil taken from a system in order to be tested.

Oil Sands: Sand bonded with such oils as linseed and the synthetics.

Oil shale: A sedimentary rock containing kerogen, a solid organic material.

Oil Shot: In die casting, a sponge like whirl on the surface of casting resulting from an excess of oil applied to the sprue hole before the shot was made.

Oil stocks: Oil stocks include crude oil (including strategic reserves), unfinished oils, natural gas plant liquids, and refined petroleum products.

Oil Stones: Molded abrasives in various shapes used to hand sharpen cutting tools.

Oil Switch: A switch arranged to interrupt one or more electric circuits in oil.

Oil Test: Test performed by the Met. Lab to check the amount of oil applied to strip.

Oil well: A well completed for the production of crude oil from at least one oil zone or reservoir.

Oil well (casing head) gas: Associated and dissolved gas produced along with crude oil from oil completions.

Oiled: A product to which oil has been applied to retard rusting.

Oiling: The application of a surface layer of lubricant intended to retard rusting on sheet products and lubrication on Tin Mill products.

OIT: (Operator Interface Terminal) Terminal which displays the line up, coils running on both reels, and the location of the weld.

Old Blowing Room: Used when the river water gets too cold.

Old field: A field discovered prior to the report year.

Old reservoir: A reservoir discovered prior to the report year.

Olefinic hydrocarbons (olefins): Unsaturated hydrocarbon compounds with the general formula C_nH_{2n} containing at least one carbon-to-carbon double-bond. Olefins are produced

at crude oil refineries and petrochemical plants and are not naturally occurring constituents of oil and natural gas. Sometimes referred to as alkenes or unsaturated hydrocarbons. Excludes aromatics.

Oleoresinous: A resin containing both oils and resins which cures by the oxidation process.

Olive: ($Mg_2Fe_2SiO_4$) A naturally occurring mineral composed of fosterite and fayalite, crushed and used as a molding sand. Usually the sand of choice in manganese steel casting due to its basicity.

Olsen (Ductility) Test: A method of measuring the ductility and drawing properties of strip or sheet metal which involves determination of the width and depth of impression. The test simulating a deep drawing operation is made by a standard steel ball under pressure, continuing until the cup formed from the metal sample fractures. Readings are in thousandths of an inch. This test is sometimes used to detect stretcher straining and indicates the surface finish after drawing, similar to the Erichsen ductility test.

OLTC: See "On Load Tap Changer"

OLTC: On Load Tap Changer.

Omni directional Antenna: This is like a dipole antenna because it radiates its signal 360 degrees horizontally; however, its signal is flatter than a dipole's allowing for higher gain.

Omni directional Antenna: Spherical antenna used to radiate equal radio waves in all direction. It is used to broadcast the signals for radio and mobile stations.

Omnirange. : A radio aid to air navigation, which creates an infinite number of paths in space throughout 360 degrees of azimuth.

On Cast: When the furnace is tapping out iron and maintaining full wind.

On Check: A term used when the furnace has pulled wind after casting to plug the hole.

On hook. : (in telephone environment) deactivated; by extension, a modem not in use is said to be "on hook". Contrast with off hook.

On Load Tap Changer: A tap changer that can be operated while the transformer is supplying load.

ON-delay: Allows an output signal to delay for a preset time after the start of the input signal.

One Piece Pattern: Solid pattern, not necessarily made from one piece of material. May have one or more loose pieces.

One Screen: A distribution of a clean sand or a sand with two maximum screens separated by a minimum screen. These high expansion problem sands are also referred to as camel back distributions.

One Side Bright Mill Finish: Sheet material having a moderate degree of brightness on one side. The reverse side is uncontrolled and may have a dull, non uniform appearance.

One sun: Natural solar insolation falling on an object without concentration or diffusion of the solar rays.

One Time Fuses: Generic term used to describe a Class H nonrenewable cartridge fuse, with a single element.

One-axis tracking: A system capable of rotating about one axis.

One-Axis Tracking (Photovoltaic): A system capable of rotating about one axis for tracking of the sun.

One-Shot: An output signal produced for a preset time that is independent of the duration of the input signal. It may begin at the start of the input signal or be delayed.

One-time fee: The fee assessed a nuclear utility for spent nuclear fuel (SNF) or solidified high-level radioactive waste derived from SNF, which fuel was used to generate electricity in a civilian nuclear power reactor prior to April 7, 1983, and which is assessed by applying industry-wide average dollar-per-kilogram charges to four distinct ranges of fuel burn up so that equivalent to an industry-wide average charge of 1.0 mill per kilowatt-hour.

One-way function. : A (mathematical) function f which is easy to compute, but which for a general value y in the range, it is computationally difficult to find a value x in the domain such that $f(x)=y$. There may be a few values y for which finding x is not computationally difficult.

One-way operation.: One-way operation refers to communications between two points in one direction only. Note. This is preferred to the term half-duplex operation, which has various interpretations.

On-highway use (diesel): Includes sales for use in motor vehicles. Volumes used by companies in the marketing and distribution of petroleum products are also included.

On-line computer. : A computer used for on-line processing.

On-line processing.: A method of processing data in which data is input directly from its point of origin and output directly to its point of use.

online UPS: A UPS in which the inverter is on during normal operating conditions supplying conditioned power to the load through an inverter or converter that constantly controls the AC output of the UPS regardless of the utility line input. In the event of a utility power failure, there is no delay or transfer time to backup power.

On-line. : A method of transmission by which signals from telecommunications equipment are passed direct to a channel/circuit to operate automatically, compatible equipment at one or more distant stations (the term must be qualified by the addition of a self-explanatory word or words eg top secret on-line cipher operation, on-line cipher, on-line data processing etc.,).

On-peak: Periods of relatively high system demand. These periods often occur in daily, weekly, and seasonal patterns; these on-peak periods differ for each individual electric utility.

on-peak energy : Energy supplied during periods of relatively high system demand as specified by the supplier.

Onsite transportation: The direct nonprocess end use that includes energy used in vehicles and transportation equipment that primarily consume energy within the boundaries of the establishment. Energy used in vehicles that are found primarily offsite, such as delivery trucks, is not measured by the MECS (an EIA survey).

On-system: Any point on or directly interconnected with a transportation, storage, or distribution system operated by a natural gas company.

Onsystem (natural gas): Natural gas that is sold (and transported) to the end user by the company making final delivery of the gas to the end user. Companies that make final delivery of natural gas are typically local distribution companies or pipeline companies.

On-system sales: Sales to customers where the delivery point is a point on, or directly interconnected with, a transportation, storage, and/or distribution system operated by the reporting company.

op amp, operational amplifier: An electronic circuit element that behaves like a voltage-controlled voltage source. It is designed to perform mathematical operations of addition, subtraction, multiplication, division, differentiation and integration.

Opeb Expense: Other Postretirement Employment Benefits. Usually refers to health care obligations to a mill's retired workers, although its meaning also can include layoff benefits (see FAS 106).

OPEC: See Organization of Petroleum Exporting Countries.

OPEC (Organization of the Petroleum Exporting Countries): An intergovernmental organization whose stated objective is to "coordinate and unify the petroleum policies of member countries." It was created at the Baghdad Conference on September 10-14, 1960. Current members (with years of membership) include

Open access: A regulatory mandate to allow others to use a utility's transmission and distribution facilities to move bulk power from one point to another on a nondiscriminatory basis for a cost-based fee.

Open access (electric): Federal Energy Regulatory Commission Order No. 888 requires public utilities to provide non-discriminatory transmission service over their transmission facilities to third parties to move bulk power from one point to another on a nondiscriminatory basis for a cost-based fee. Order 890 expanded Open Access to cover the methodology for calculating available transmission transfer capability; improvements that opened a coordinated transmission planning processes; standardization of energy and generation imbalance charges; and other reforms regarding the designation and undesignation of transmission network resources. See NERC definition.

Open access transmission tariff (electric): Electronic transmission tariff accepted by the U.S. Federal Energy Regulatory Commission requiring the Transmission Service Provider to furnish to all shippers with non-discriminating service comparable to that provided by Transmission Owners to themselves. See NERC definition.

Open architecture. : An architecture that is compatible with hardware and software from any of many vendors. Contrast with closed architecture.

open circuit: A circuit element which has an impedance approaching zero.

Open Collector: NPN and PNP devices that have no other components connected to the collector portion of the device. An external load connected to an open collector output provides similar operation to a SPST mechanical relay.

Open Die Forging: See Forging: Open Die Forging

Open Face Mold: See Open Sand Casting

Open Flame Furnace: As opposed to the crucible furnace; in the open flame furnace the metal charge is confined in the refractory lining, with the flame and products of combustion coming in direct contact with the metal.

Open Grain Structure: A defect wherein a casting, when machined or fractured, appears to be coarse grained and porous; usually due to a shrink area.

Open Hearth Furnace: A broad, shallow hearth to refine pig iron and scrap into steel. Heat is supplied from a large, luminous flame over the surface, and the refining takes seven to nine hours. Open Hearths, at one time the most abundant steelmaking furnaces among integrated companies, have been replaced by the basic oxygen furnace.

Open Hearth Line: An alternate water supply line from the Old Blowing Room Pump Room to the Old Blowing Room used when the river water gets too cold.

Open Hearth Process: Process of making steel by heating the metal in the hearth of a regenerative furnace. In the basic open hearth steel process, the lining of the hearth is basic,

usually magnesite; whereas in the acid open hearth steel process, an acid material, silica, is used as the furnace lining and pig iron, extremely low in phosphorous (less than 0.04%), is the raw material charged in.

Open Line: Usually a steel making defect, an open line refers to a line down the length of the strip caused by unknown conditions.

Open Link: A fuse used on overhead electrical distribution systems that is held in place by two springs. This device and its holder have generally been replaced by Fused Cutouts where the fuse element is in an arc tube.

Open Loop: In a control system, a type of control that has an input signal, but no feedback of the result of the input signal.

Open Market Coal: Coal sold in the open market (i.e., coal sold to companies other than in the reporting company's parent company or an operating subsidiary of the parent company).

Open refrigeration unit: Refrigeration in cabinets (units) without covers or with flexible covers made of plastic or some other material, hung in strips or curtains (fringed material, usually plastic, that push aside like a bead curtain). Flexible covers stop the flow of warm air into the refrigerated space.

Open Riser: See Riser, Open

Open Sand Casting: A casting produced in an open mold; poured in the drag, with no cope or other top covering.

Open Surface: Rough surface on black plate, sheet or strip, resulting from imperfection in the original steel bars from which the plate was rolled.

Open System Architecture: International standards for data network which allows multi-vendor/multi-product applications.

Open-Circuit Voltage : It is the difference of electrical potential between two terminals of a device or battery when disconnected from any circuit or on zero load condition.

Open-Circuit Voltage (Battery): The voltage of a cell or battery when it is not delivering or receiving power.

Open-circuit voltage (Voc): The maximum possible voltage across a photovoltaic cell or module; the voltage across the cell in sunlight when no current is flowing.

Openhearth Furnace: A furnace for melting metal, in which the bath is heated by the combustion of hot gases over the surface of the metal and by radiation from the roof.

Opening Time: For a CB the time between energizing of the trip coil and the instant of contact parting. With a relay the operating time is defined as the time which elapses between the application of a characteristic quantity and the instant when the relay operates.

Opening Time: Opening time is the time at which any system or ports open. It may be referred to the opening time of the engine valves or contact breakers points of any relay or switches.

Operable capacity: The amount of capacity that, at the beginning of the period, is in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day or barrels per stream day.

Operable generators/units: Electric generators or generating units that are available to provide power to the grid or generating units that have been providing power to the grid but

are temporarily shut down. This includes units in standby status, units out of service for an indefinite period, and new units that have their construction complete and are ready to provide test generation. A nuclear unit is operable once it receives its Full Power Operating License.

Operable nuclear unit (foreign): A nuclear generating unit outside the United States that generates electricity for a grid.

Operable nuclear unit (U.S.): A U.S. nuclear generating unit that has completed low-power testing and is in possession of a full-power operating license issued by the Nuclear Regulatory Commission.

Operable refineries: Refineries that were in one of the following three categories at the beginning of a given year in operation; not in operation and not under active repair, but capable of being placed into operation within 30 days; or not in operation, but under active repair that could be completed within 90 days.

Operable unit: A unit available to provide electric power to the grid. See definition for operating unit.

Operable utilization rate: Represents the use of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operable refining capacity of the units.

Operated: Exercised management responsibility for the day-to-day operations of natural gas production, gathering, treating, processing, transportation, storage, and/or distribution facilities and/or a synthetic natural gas plant.

Operating Pressure: The level of pressure at which a component, pipe, tube, hose or other fluid passage will experience during application of maximum expected fluid pressure.

Operating capacity: The component of operable capacity that is in operation at the beginning of the period.

Operating Current: The current at which a relay will pick up.

Operating Current: The operating current is the actual current drawn while in operation. For ex a 100 hp motor is rated at 140 amps but while under load condition the operating current is only 100 amps.

Operating Current (of a relay): The current used by a lamp and ballast combination during normal operation.

Operating day: A normal business day. Days when a company conducts business due to emergencies or other unexpected events are not included.

Operating Distance: The distance from the sensing face to the plane of the target's path once it reaches the operating point.

Operating expenses: Segment expenses related both to revenue from sales to unaffiliated customers and revenue from intersegment sales or transfers, excluding loss on disposition of property, plant, and equipment; interest expenses and financial charges; foreign currency translation effects; minority interest; and income taxes.

Operating income: Operating revenues less operating expenses. Excludes items of other revenue and expense, such as equity in earnings of unconsolidated affiliates, dividends, interest income and expense, income taxes, extraordinary items, and cumulative effects of accounting changes.

Operating Point: The point at which a target is sensed as it approaches the sensing field of the sensor. Also called "trip point."

Operating Range: The range in the x,y,z plane that will cause the switch to operate when a detectable object is in it.

Operating Rates: The ratio of raw steel production to the mill's stated capacity. Each December, steel companies report to the AISI their estimated capacity (if they could sell all steel they produced) for the following year, adjusted for any facility downtime.

Operating revenues: Segment revenues both from sales to unaffiliated customers (i.e., revenue from customers outside the enterprise as reported in the company's consolidated income statement) and from intersegment sales or transfers, if any, of product and services similar to those sold to unaffiliated customers, excluding equity in earnings of unconsolidated affiliates; dividend and interest income; gain on disposition of property, plant, and equipment; and foreign currency translation effects.

Operating signal. : A three-letter group used as necessary in connection with operations or communications to convey orders, instructions, requests, reports and information to facilitate communications.

Operating subsidiary: Company that operates a coal mining operation and is owned by another company (i.e., the parent company).

operating temperature: The range of temperature over which a device may be safely used. The temperature range which the device has been designed to operate.

Operating Temperature Range: The range of ambient temperatures within which the transducer may be operated and not suffer any damage or permanent change in specifications.

Operating time Characteristic: The curve depicting the relationship between different values of the characteristic quantity applied to a relay and the corresponding values of operating time.

Operating unit: A unit that is in operation at the beginning of the reporting period.

Operating utilization rate: Represents the use of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operating refining capacity of the units.

Operating Value: The limiting value of the characteristic quantity at which the relay actually operates.

operating voltage: The value of the voltage under normal conditions at a given instant and at a given point in the system.

operation and maintenance (O & M , O and M) expenses : Costs that relate to the normal operating, maintenance and administrative activities of a business.

Operation Mode: Two possible modes that will cause the switch to operate and produce an output. Light-on or Dark-on mode.

operational amplifier: [see op amp]

Operational Amplifier (Op Amp): A highly stable direct coupled amplifier resistant to oscillation. May be packaged in an IC format.

operational net assessment (ona) : operational support tool that provides a joint task commander with visibility of effects-to-task linkages, based on a "system-of-systems" analysis of a potential adversary's political, military, economic, social, infrastructure, and information war making capabilities. The ona informs decision makers from strategic to tactical levels of the complimentary effects and supporting missions and tasks to be considered when applying the full range of diplomatic, information, military, and economic

actions, in order to achieve specific effects on an adversary's will and capability, to support national objectives. Ona is critical to achieve rapid, decisive operations. This integrated, collaborative product of the dod and other appropriate organizations aims to identify key elements within the adversary's systems and to propose methods that will influence, neutralize, or destroy them, thus achieving a desired effect or ona is an outcome.

Operations security (opsec). : A process of identifying critical information and subsequently analyzing friendly actions attendant to military operations and other activities to:a.)Identify those actions that can be observed by adversary intelligence systems.b. Determine indicators hostile intelligence systems might obtain that could be interpreted or pieced together to derive critical information in time to be useful to adversaries.c. Select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation. (dod)

operator: person handling equipment.

Operator Side: The side of the strip that is nearest to the operator pulpit.

Operator, gas plant: The person responsible for the management and day-to-day operation of one or more natural gas processing plants as of December 31 of the report year. The operator is generally a working-interest owner or a company under contract to the working-interest owner(s). Plants shut down during the report year are also to be considered "operated" as of December 31

Operator, oil and/or gas well: The person responsible for the management and day-to-day operation of one or more crude oil and/or natural gas wells as of December 31 of the report year. The operator is generally a working-interest owner or a company under contract to the working-interest owner(s). Wells included are those that have proved reserves of crude oil, natural gas, and/or lease condensate in the reservoirs associated with them, whether or not they are producing. Wells abandoned during the report year are also to be considered "operated" as of December 31.

OPGW: Optical Ground Wire a ground wire that includes optical fibers to provide a communications link.

OPRG: Oxygenated fuels Program Reformulated Gasoline is reformulated gasoline that is intended for use in an oxygenated fuels program control area during an oxygenated fuels program control period.

Optical Fiber: A thin filament of glass or plastic capable of carrying information in the form of light.

Optical fibre. : One of the glass strands - each of which is an independent circuit - in a fibre optic cable.

Optical Pyrometer: A temperature measuring device through which the observer sights the heated object and compares its incandescence with that of an electrically heated filament whose brightness can be regulated; or the intensity of the light admitted from the object may be varied through filters and compared with a constant light source.

optical radiation : Electromagnetic radiation at wavelengths between the region of transition to Xrays (1 \diamond 1 nm) and the region of transition to radio waves (1 \diamond 1 mm).

Optimum Moisture: That moisture content which results in developing the maximum of any property of a sand mixture.

Optional delivery commitment: A provision to allow the conditional purchase or sale of a

specific quantity of material in addition to the firm quantity in the contract.

Options: A choice to buy or sell metal at an agreed upon price for a specific date. You must pay a premium (See Put and Call).

options : Options are potential decisions over which a utility has a reasonable degree of control.

optocoupler: A combination of an LED and a photodiode to give high isolation between the input and the output.

optoelectronics: A technology that combines optics and electronics, including many devices based on the action of a pn junction. Examples are LEDs, photodiodes, and optocouplers.

OR gate: A logic circuit that outputs a HIGH whenever one of its inputs is a HIGH. Organisations with generating capacity that are not associated with traditional electricity utilities.

OR gate or logic: Generates a logic 1 if any one of its two or more inputs are 1.

Orange Peel: A pebble grain surface which develops in forming of metals having coarse grains.

Orange Peel (Effect): A surface roughening (defect) encountered in forming products from metal stock that has a coarse grain size. It is due to uneven flow or to the appearance of the overly large grains usually the result of annealing at too high a temperature. Also referred to as pebbles and alligator skin.

Orange Peel Bucket: A bottom drop bucket used for charging cupolas; the drop bottom is divided into a number of sections that appear to peel back as the bucket opens.

Orbit. : The path described by the centre of mass of a satellite or other object in space, relative to a specific frame of reference, e.g. The centre of the earth

Orcad Software: The OrCAD software products were developed by Cadence Design Systems in San Jose, California. The OrCAD line is used to support the custom design of electronic systems, with a primary focus on the design of printed circuit boards (PCB).

Order: A ruling issued by a utility commission granting or denying an application in whole or in part. The order explains the basis for the decision, noting any dispute with the factual assertions of the applicant. Also applied to a final regulation of a utility commission.

Order Matte: Individual description of the orders to be processed (issued by Production Planning). Also called 'mat' or 'mill order paper'.

Order Rate: The ratio of new orders recorded to the mill's capacity to produce the steel to fill the orders. Many analysts view trends in the order rate as harbingers of future production levels.

Order wire. : See circuit, engineering.

Ore: An iron bearing material used primarily in the blast furnace.

Organic content: The share of a substance that is of animal or plant origin.

Organic Fiber: A fiber derived or composed of matter originating in plant or animal life or composed of chemicals of hydrocarbon origin, either natural or synthetic.

Organic waste: Waste material of animal or plant origin.

Organisational message. : A message sent on behalf of an organisation, in the name of that organisation, that establishes a legal commitment under military law. It has been released in accordance with the policies of the originating nation (e.g. Military orders). Individuals may send organisational messages to other individuals on behalf of their respective organisations.

Organization for Economic Cooperation and Development (OECD): An international organization helping governments tackle the economic, social and governance challenges of a globalized economy. Its membership comprises about 30 member countries. With active relationships with some 70 other countries, non-governmental organizations (NGOs) and civil society, it has a global reach.

Organization of the Petroleum Exporting Countries (OPEC): Organization of Petroleum Exporting Countries.

Organosol: Organosols contain poly vinyl chloride (PVC) dispersed in solvents. At temperatures of 325 350 B0 F (165 175 B0 Centegrade) the vinyl particles coalesce and dissolve in the plasticizers to form homogeneous films with good hardness, toughness and adhesion.

Orifice: An opening of controlled size used to measure or control the flow of gases.

Orifice Plate: In a cupola a device used to measure the volume of air delivered to the windbox.

Orifice Flange: An orifice flange is used with an orifice flowmeter to measure liquid or gas flow rates in a piping system. An orifice flowmeter is designed such that the flow being measured is forced through a hole, or orifice, in a plate. The hole is designed to constrict and the pressure is measured both upstream and downstream of the hole. Knowing the inlet and exit are of the orifice and the inlet and exit pressures, the flowmeter is able to determine the flow rate. The orifice flange is used in place of standard flanges to allow for the proper installation of the orifice plate or flowmeter.

origin of an installation: The position at which electrical energy is delivered to an electrical installation.

Original cost: The initial amount of money spent to acquire an asset. It is equal to the price paid, or present value of the liability incurred, or fair value of stock issued, plus normal incidental costs necessary to put the asset into its initial use.

Original equipment manufacturer (OEM): A company that provides the original design and materials for manufacture and engages in the assembly of vehicles. The OEM is directly responsible for manufacturing, marketing, and providing warranties for the finished product.

Original equipment manufacturer vehicle: A vehicle produced and marketed by an original equipment manufacturer (OEM), including gasoline and diesel vehicles as well as alternative-fuel vehicles. A vehicle manufactured by an OEM but converted to an alternative-fuel vehicle before its initial delivery to an end-user (for example, through a contract between a conversion company and the OEM) is considered to be an OEM vehicle as long as that vehicle is still covered under the OEM's warranty.

Originator. : The command by whose authority a message is sent. The originator is responsible for the functions of the drafter and releasing officer.

Oscillate Wound: Oscillate winding is a technique that was developed to aid in winding and shipping customer orders for multiples. (Multiples are created by slitting or shearing a coil into any width or set of widths) The slits are wound back and forth on a mandrel in the same manner that a fishing line is taken up on a reel; that is left to right, right to left, left to right. This allows for multiples to be wrapped on one wide coil that is easily handled in shipping.

Oscillated Wound Or Scroll Wound: A method of even winding metal strip or wire on to a reel or mandrel wherein the strands are uniformly overlapped. Sometimes termed stagger

wound or vibrated wound. The opposite of ribbon wound.

Oscillating: A method of winding narrow strip steel over a much wider roll. Customers want to have as much steel on a coil as will fit in their machines, so they can spend less time moving the material and more time using it. By coiling the strip like fishing line (or thread) over a spool, a much longer strip can fit onto a coil of proper diameter. Oscillate wound coils allow the customer to enjoy longer processing runs.

Oscillating Trough Cooler: A steel trough conveyor within a plenum where reclaimed sand is cooled prior to reuse.

oscillator: A circuit that produces an alternating waveform as output when the primarily powered by a direct input.

Oscillator : A circuit that converts dc power into ac signals with constant frequency. Also, an instrument that generates ac signals whose frequency and amplitude can be varied. These are also referred to as signal generators.

Oscillator. : A device, which produces an electrical signal of relatively constant frequency and amplitude.

Oscillograph: An instrument for measuring alternating electric current or voltage by capturing the wave form. Electric Utilities use a variant called a Prefault Recorder, where the wave forms are stored for a short time on an ongoing basis and saved if the system sees

Oscillograph: it is the electric instruments used to measure the current and voltage values of varying current or alternating current of any system by means of electromagnetic or cathode rays

Oscilloscope: An instrument that displays a plot of voltage over time. Often referred to as a scope.

oscilloscope: An instrument for making visible the instantaneous values of one or more rapidly varying electrical quantities as a function of time or of another electrical or mechanical quantity.

Oscilloscope: Test instrument for showing visually the changes in a varying current by displaying the corresponding voltage wave form on a fluorescent screen.

oscilloscope. : An instrument for showing, visually, graphical representations of the waveforms encountered in electrical circuits.

OSHA: Occupational Safety and Health Standards. Section 1910 Subpart S Electrical Standard number 1910.333 specifically addresses Standards for Work Practices.

OSHA: Occupational Safety and Health Act of 1970 administered by the U.S. Dept. of Labor which establishes standards and safety requirements which all businesses must meet.

OSHA: (Occupational Safety and Health Administration) part of the U.S. Department of Labor responsible for assuring that employers provide safe and healthful working conditions and equipment for employees, and that employees properly avail themselves of these conditions.

OSHA 29 CFR 1910, Subpart S-Electrical: Occupational Safety and Health Administration. Government agency which seeks to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging c

OSI 7-layer model: The Open System Interconnection 7 layer model is a model developed by ISO for modeling of a communications network.

Osi model, open systems interconnection model. : A 7-layer hierarchical reference structure

developed by the ISO for defining, specifying and relating communications protocols; not a standard nor a protocol; short for international standard reference model of open systems inter-connection.

Osmium: Chemical symbol Os. A bluish white metal that is so hard it is difficult to fabricate.

Osmondite: An obsolete term once used to designate a ferrous microstructure not so well defined as Troosite.

OTEC: See Ocean Thermal Energy Conversion.

Other: The "other" category is defined as representing electricity consumers not elsewhere classified. This category includes public street and highway lighting service, public authority service to public authorities, railroad and railway service, and interdepartmental services.

Other capital costs: Costs for items or activities not included elsewhere under capital-cost tabulations, such as for and decommissioning, dismantling, and reclamation.

Other demand-side management (DSM) assistance programs: A DSM program assistance that includes alternative-rate, fuel-switching, and any other DSM assistance programs that are offered to consumers to encourage their participation in DSM programs.

Other end users: For motor gasoline, all direct sales to end users other than those made through company outlets. For No. 2 distillate, all direct sales to end users other than residential, commercial/institutional, industrial sales, and sales through company outlets. Included in the "other end users" category are sales to utilities and agricultural users.

Other energy operations: Energy operations not included under Petroleum or Coal. "Other energy" includes nuclear, oil shale, tar sands, coal liquefaction and gasification, geothermal, solar, and other forms of non-conventional energy.

Other finished: Motor gasoline not included in the oxygenated or reformulated gasoline categories.

Other gas: Includes manufactured gas, coke-oven gas, blast-furnace gas, and refinery gas. Manufactured gas is obtained by distillation of coal, by the thermal decomposition of oil, or by the reaction of steam passing through a bed of heated coal or coke.

Other generation: Electricity originating from these sources biomass, fuel cells, geothermal heat, solar power, waste, wind, and wood.

Other Hydrocarbons: Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite. Excludes natural gas used for fuel or hydrogen feedstock.

Other industrial plant: Industrial users, not including coke plants, engaged in the mechanical or chemical transformation of materials or substances into new products (manufacturing); and companies engaged in the agriculture, mining, or construction industries.

Other load management: Demand-Side Management (DSM) program other than Direct Load Control and Interruptible Load that limits or shifts peak load from on-peak to off-peak time periods. It includes technologies that primarily shift all or part of a load from one time-of-day to another and secondarily may have an impact on energy consumption. Examples include space heating and water heating storage systems, cool storage systems, and load limiting devices in energy management systems. This category also includes programs that aggressively promote time-of-use rates and other innovative rates such as real time pricing. These rates are intended to reduce consumer bills and shift hours of operation of equipment from on-peak to off-peak periods through the application of time-differentiated rates.

Other oils equal to or greater than 401 degrees Fahrenheit: Oils with a boiling range equal to or greater than 401 degrees Fahrenheit that are intended for use as a petrochemical feedstock.

Other operating costs: Costs for other items or activities not included elsewhere in operating-cost tabulations, but required to support the calculation of a cutoff grade for ore reserves estimation.

Other oxygenates: Other aliphatic alcohols and aliphatic ethers intended for motor gasoline blending (e.g., isopropylether (IPE) or n-propanol).

Other power producers: Independent power producers that generate electricity and cogeneration plants that are not included in the other industrial, coke and commercial sectors.

Other refiners: Refiners with a total refinery capacity in the United States and its possessions of less than 275,000 barrels per day as of January 1, 1982.

Other service to public authorities: Electricity supplied to municipalities, divisions or agencies of state or Federal governments, under special contracts or agreements or service classifications applicable only to public authorities.

Other single-unit truck: A motor vehicle consisting primarily of a single motorized device with more than two axles or more than four tires.

Other supply contracts: Any contracted gas supply other than owned reserves, producer-contracted reserves, and interstate pipeline purchases that are used for acts and services for which the company has received certificate authorization from FERC. Purchases from intrastate pipelines pursuant to Section 311(b) of the NGPA of 1978 are included with other supply contracts.

Other tests: include the determination of the ash softening temperature, the ash fusion temperature (the temperature at which the ash forms clinkers or slag), the free swelling index (a guide to a coal's coking characteristics), the Gray King test (which determines the suitability of coal for making coke), and the Hardgrove grindability index (a measure of the ease with which coal can be pulverized). In a petrographic analysis, thin sections of coal or highly polished blocks of coal are studied with a microscope to determine the physical composition, both for scientific purposes and for estimating the rank and coking potential.

Other trucks/vans: Those trucks and vans that weigh more than 8,500 lbs GVW.

Other unavailable capability: Net capability of main generating units that are unavailable for load for reasons other than full-forced outage or scheduled maintenance. Legal restrictions or other causes make these units unavailable.

Ottawa Sand: A sand originating near Ottawa Ill., also know as St. Peter sandstone.

Out Of Register: An embossed pattern distortion due to misalignment of the male and female embossing rolls

Outage: The period during which a generating unit, transmission line, or other facility is out of service.

Outage: The state of a component or part of a power system that is not available for service because of some event associated with the component of power system. These are the longer term events (several seconds to hours) caused by external factors such as trees

outage: The period during which a generating unit, transmission line, or other facility is out of service.

Outage: the period when a power supply or other service is not available or when equipment

is closed down.

Outage, Forced: 1. An outage that results from conditions directly associated with a power system component requiring that it be taken out of service either automatically or after switching operations can be performed. 2. An outage by improper operation of equipment or

Outage, Scheduled: An outage that results from intentionally taking a power system out of service, normally for maintenance or replacement.

Outboard Bearing: Pump bearing that is furthest from the driver.

Outer Continental Shelf: Offshore Federal domain.

Outlet: Outlet valve from auto valve or tank.

outlet: A point on the wiring system at which current is taken to supply utilization equipment.

Outlet: A fixed connection where horizontal cable terminates and work area equipment can be connected.

Outlet: A point on the wiring system at which current is taken to supply utilization equipment.

Output: The amount of power or energy produced by a generating unit, station, or system.

Output: The electrical signal which is produced by an applied input to the transducer.

Output common mode interface voltage: An unwanted alternating voltage which exists between each of the output terminals and a reference point.

Output Current of a transducer: The current produced by the transducer which is an analog function of the measurand.

Output Load: The total effective resistance of the circuits and apparatus connected externally across the output terminals.

Output Load: The output power of a transducer divided by the input power

Output series mode interface voltage: An unwanted alternating voltage appearing in series between the output terminals and the load.

Output Span: The algebraic difference between the lower and upper nominal values of the output signal.

Output Stage: A spool or other device that is controlled by a smaller spool or torque motor.

Output to Input Ratio: The output power of a transducer divided by the input power

Output Transistor: A semiconductor device used to provide ON/OFF switching of external holds.

Oval: A hot rolled carbon steel bar product which is oval in cross section.

Ovality: Deviation from a circular periphery, usually expressed as the total difference found at any one cross section between the individual maximum and minimum diameters, which usually occur at or about 90 degrees

Oven: See Continuous Annealing Furnace

Oven: An appliance that is an enclosed compartment supplied with heat and used for cooking food. Toaster ovens are not considered ovens. The range stove top or burners and the oven are considered two separate appliances, although they are often purchased as one appliance.

Over current Relay: A protection relay whose tripping decision is related to the degree by which the measured current exceeds a set value.

Over range: The specified maximum operating point for which the stated accuracy condition applies.

Overaging: Aging a precipitation hardening alloy under conditions of time and temperature greater than those required to obtain maximum strength or hardness.

Overarm: The support for the end of a milling cutter which is on the opposite side of the cutter from the spindle and column.

Overburden: Any material, consolidated or unconsolidated, that overlies a coal deposit.

Overburden ratio: Overburden ratio refers to the amount of overburden that must be removed to excavate a given quantity of coal. It is commonly expressed in cubic yards per ton of coal, but is sometimes expressed as a ratio comparing the thickness of the overburden with the thickness of the coalbed.

Overcharge (battery): The forcing of current through a cell after all the active material has been converted to the charged state (after 100% charged). The result will be the decomposition of water in the electrolyte into hydrogen and oxygen gas

Overcharge (battery): to feeding the current to a battery after full charging . It may be harmful for the battery because it may explode due to overheating and overcharging.

Overcurrent: Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload, short circuit or ground fault.

Overcurrent: Any current in excess of conductor ampacity or in excess of equipment continuous current rating.

overcurrent detection : A method of establishing that the value of current in a circuit exceeds a predetermined value for a specified length of time.

overcurrent : Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload, short circuit, or ground fault.

Overfill: A defect in a rolled bar or other section which is an over fullness on some part of the surface. Among the causes are worn rolls and extrusion into the clearance of the rolls.

Overfiring: Heating refractories to a temperature sufficient to cause pronounced vitrification, deformation, or bloating.

Overhand: Extension of the end surface of the cope half of a core print beyond that of the drag to provide clearance for closing of the mold.

Overhead bit. : A non-data bit used in addressing, control, error detection, error control, or synchronization. Contrast with information bit.

Overhead Magnets: A magnet is an object that attracts ferromagnetic materials such as iron. The magnet creates a magnetic field that generates the attractive force. Overhead magnets are often used in industrial process applications or waste management. They are often coupled with conveyor systems to remove metal objects or fragments from the material moving through the processing system.

Overhead Separators: Used when producing mults on a slitting unit; disks which make an alley for each strip to go through while being coiled.

Overhead Transmission Lines: Overhead AC transmission lines share one characteristic; they carry 3-phase current. The voltages vary according to the particular grid system they belong to. Transmission voltages vary from 69 kv up to 765 kv.

Overheated: A term applied when, after exposure to an excessively high temperature, a metal develops an undesirable coarse grain structure, but is not necessarily damaged permanently. Unlike burned structure, the structure produced by overheating can be corrected by suitable heat treatment, by mechanical work, or by a combination of the two.

Overlap: The condition of a spool and body in a servo valve or other spool valve wherein the spool must move a specified amount (the overlap) before exposing two adjacent cavities to

each other.

Overlap: The amount the trailing edge laps over the leading edge of a spiral tape wrap.

Overload: A load in excess of the design limit for a circuit.

Overload: The specified maximum magnitude of the input quantity that can be applied for a specified period of time without causing damage.

Overload: Load greater than the load for which the system or mechanism was intended. A fault, such as a short circuit or ground fault, is not an overload.

Overload: The situation for a machine to having load greater than its maximum designed limit. It may be for loading any battery for after prescribed limit or to any lift.

Overload: The operation of conductors or equipment a current that will cause damage if allowed to persist.

overload current : An overcurrent occurring in a circuit which is electrically sound.

overload protection : Effect of a device operating on excessive current, but not necessarily on short circuit, to cause and maintain the interruption of current flow to the device being managed.

overload relay : A relay that responds to electric load and operates at a pre-set value of overload.

overload : Over-loading occurs when extra power is taken from the supply. The increased current due to over-loading will have an immediate effect on the cables; they will begin to heat up. If the over-loading is sustained the result could be an accelerated deterioration of the cable insulation and its eventual breakdown to cause an electrical fault.

Overpickled: Reject caused by the strip laying in acid for a period of time.

Overriding royalty: A royalty interest, in addition to the basic royalty, created out of the working interest; it is, therefore, limited in its duration to the life of the lease under which it is created.

Oversampling. : A tdm technique where each bit from each channel is sampled more than once.

Overshoot: Occurs when the process exceeds the target value as operating conditions change.

Overshoot Time: The overshoot time is the difference between the operating time of the relay at a specified value of the input energizing quantity and the maximum duration of the value of input energizing quantity which, when suddenly reduced to a specific value below th

Oversized Wall Plate: A wall plate with length and width dimensions greater then standard wall plates.

Overspeed Trip : (On steam pumps) A device that trips the turbine on a steam pump if the prime is lost and the pump overspeeds.

Overspeed Trip Switch: Spring loaded stop valve which is connected to a turbine governor by a linkage rod that will stop the flow of steam to a turbine.

Overspeed. : Condition in which the transmitting device runs slightly faster than the data presented for transmission; overspeeds of 0.1% for modems and 0.5% for data pabxs are typical.

Overstressing: Permanently deforming a metal by subjecting it to stresses that exceed the elastic limit.

overvoltage: Similar to a surge but for a longer period of time, over 2.5 second.

Overwidth: Product whose width is above the customer's finished width tolerance.

Overwrap: The direction which a coil is wrapped or unwrapped. If coil is being overwrapped a reel is turning and steel is being fed from TOP.

Owen Jet Dust Counter: An instrument similar to the Konimeter, using the humidification factor.

Owned reserves: Any reserve of natural gas that the reporting company owns as a result of oil and gas leases, fee-mineral ownership, royalty reservations, or lease or royalty reservations and assignments committed to services under certificate authorizations by FERC. Company-owned recoverable natural gas in underground storage is classified as owned reserves.

Owned/rented: (As used in EIA's consumption surveys.) The relationship of a housing unit's occupants to the structure itself, not the land on which the structure is located. "Owned" means the owner or co-owner is a member of the household and the housing unit is either fully paid for or mortgaged. A household is classified "rented" even if the rent is paid by someone not living in the unit. "Rent-free" means the unit is not owned or being bought and no money is paid or contracted for rent. Such units are usually provided in exchange for services rendered or as an allowance or favor from a relative or friend not living in the unit. Unless shown separately, rent-free households are grouped with rented households.

Owner occupied: (As used in EIA's consumption surveys.) Having the owner or the owner's business represented at the site. A building is considered owner occupied if an employee or representative of the owner (such as a building engineer or building manager) maintains office space in the building. Similarly, a chain store is considered owner occupied even though the actual owner may not be in the building but headquartered elsewhere. Other examples of the owner's business occupying a building include State-owned university buildings, elementary and secondary schools owned by a public school district, and a post office where the building is owned by the U.S. Postal Service.

Owners equity: Interest of the owners in the assets of the business represented by capital contributions and retained earnings.

Ownership: (See Owned/rented.)

Ownership of building: (As used in EIA's consumption surveys.) The individual, agency, or organization that owns the building. For certain EIA consumption surveys, building ownership is grouped into the following categories Federal, State, or local government agency; a privately owned utility company; a church, synagogue, or other religious group; or any other type of individual or group.

Oxidation: The process of uniting a compound with oxygen, usually resulting in an unwanted surface degradation of the material or compound.

Oxide: A compound of oxygen with another element.

Oxide Discoloration: See ?Stain, Heat Treat?.

Oxide fuels: Enriched or natural uranium in the form of the oxide UO₂, used in many types of reactor.

Oxidize: To chemically transform a substance by combining it with oxygen.

Oxidized Surface: A surface having a thin, tightly adhering oxidized skin.

Oxidizing Atmosphere : An atmosphere resulting from the combustion of fuels in an atmosphere where excess oxygen is present, and with no unburned fuel lost in the products of combustion.

Oxy Acetylene Welding: A process for joining two pieces of metal in which the required high temperature is obtained by the combustion of acetylene gas and oxygen. The gases are thoroughly mixed in the nozzle or tip of the welding torch to ensure perfect combustion. The weld may be formed directly between two adjoining surfaces, but usually metal from a welding rod is fused in between the surfaces of the joint.

Oxygen: Oxygen is one of the chief constituents of the atmosphere of which it forms approximately on fifth. It is odorless and invisible. Although oxygen itself does not burn, it is extremely efficient in supporting combustion, nearly all other chemical elements

Oxygen Blow: (O₂ blow) Steel making period when oxygen is introduced into the furnace vessel of scrap metal and blast furnace hot metal.

Oxygen Bomb Calorimeter: An instrument to measure the heats of combustion of solid and liquid fuels.

Oxygen Free Copper: Electrolytic copper free from cuprous oxide, produced without the use of residual metallic or metalloidal deoxidizers.

Oxygen Lance: A length of pipe used to convey oxygen onto a bath of molten metal.

Oxygen Recombination: The process by which oxygen generated at the positive plate during charge reacts with the pure lead material of the negative plate and in the presence of sulfuric acid and reforms water.

Oxygenated gasoline: Finished motor gasoline, other than reformulated gasoline, having an oxygen content of 2.7 percent or higher by weight and required by the U.S. Environmental Protection Agency (EPA) to be sold in areas designated by EPA as carbon monoxide (CO) nonattainment areas. See Nonattainment area.

Oxygenated gasoline (includes Gasohol): Finished motor gasoline, other than reformulated gasoline, having an oxygen content of 1.8 percent or higher by weight. This includes gasohol irrespective of where it is consumed.

Oxygenates: Substances which, when added to gasoline, increase the amount of oxygen in that gasoline blend. Fuel ethanol, Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), and methanol are common oxygenates.

Ozone: A molecule made up of three atoms of oxygen. Occurs naturally in the stratosphere and provides a protective layer shielding the Earth from harmful ultraviolet radiation. In the troposphere, it is a chemical oxidant, a greenhouse gas, and a major component of photochemical smog.

Ozone: Form of oxygen produced by discharge of electricity into the air.

Ozone precursors: Chemical compounds, such as carbon monoxide, methane, non methane hydrocarbons, and nitrogen oxides, which in the presence of solar radiation react with other chemical compounds to form ozone.

Ozone Test: Exposure of material to a high concentration of ozone to give an accelerated indication of oxidation in normal environments and in proximity to ozone producing apparatus.

P: Two or more rubber-insulated stranded conductors with cotton braid over each. Reinforced with overall covering of cotton braid over rubber filler. For pendant or portable use in damp locations. 300V-600V

P/C: An abbreviation for the pre coat section of the line.

P/n: A semiconductor device structure in which the junction is formed between a p-type layer

and an n-type layer.

P1: In production, the acceptable quality level.

P2: In production, lot tolerance.

Pabx, private automatic branch exchange. : A fully automatic telephone circuit-switching network for voice or data circuits, by means of which it is possible to dial direct from one extension to another in the same establishment. Note: it doesn't belong to the public telephone system, but is usually connected to it. Specific types of pabxs include data pabxs and voice/data pabxs.

PAC: Preassembled aerial cable

Pacific: Alaska, California, Hawaii, Oregon, and Washington.

Pack Hardening : See Case Hardening

Pack Rolling: Rolling two or more pieces of thin sheet at the same time, a method usually practiced in rolling sheet into thin foil.

Package: An object used for accumulating and dispensing wire and cable for further processing or end use. A few of the more popular types of packages are reels, bobbins, spools, stems, and coils.

Packaged air conditioning units: Usually mounted on the roof or on a slab beside the building. (These are known as self-contained units, or Direct Expansion (DX). They contain air conditioning equipment as well as fans, and may or may not include heating equipment.) These are self-contained units that contain the equipment that generates cool air and the equipment that distributes the cooled air. These units commonly consume natural gas or electricity. The units are mounted on the roof top, exposed to the elements. They typically blow cool air into the building through duct work, but other types of distribution systems may exist. The units usually serve more than one room. There are often several units on the roof of a single building. Also known as Packaged Terminal Air Conditioners (PTAC). These packaged units are often constructed as a single unit for heating and for cooling.

Packaged units: Units built and assembled at a factory and installed as a self-contained unit to heat or cool all or portions of a building. Packaged units are in contrast to engineer-specified units built up from individual components for use in a given building. Packaged Units can apply to heating equipment, cooling equipment, or combined heating and cooling equipment. Some types of electric packaged units are also called "Direct Expansion" or DX units.

Packet: When data is ready to be transmitted it is divided into pieces called packets. These packets contain information about which computer sent the data and where the data is going.

Packet: it is the unit given to the data that is routed between origin and destination on the network.

Packet header. : (in packet-switched networks) the first 3 octets of an x25 packet.

Packet type identifier. : (in x25 packet-switched networks) the third octet in the packet header that identifies the packet's function and, if applicable, its sequence number.

Packet. : A group of bits - including information bits and overhead bits - transmitted as a complete package on a packet-switched network. Usually smaller than a transmission block. Often called a message.

packet-switched network. : A data communications network that transmits packets. Packets from different sources are interleaved and sent to their destination over virtual circuits. The term includes pdns and cable-based lans.

Packing : A seal or gasket.

Packing factor: The ratio of array area to actual land area or building envelope area, for a system; or, the ratio of total Photovoltaic cell area to the total module area, for a module.

Packing Grease: A type of grease used to keep a seal and prime on a pump.

PAD Districts or PADD: See Petroleum Administration for Defense Districts.

Pad Mounted Transformer: A transformer that is mounted on a pad (usually concrete or polycrrete) that is used for underground service. Pad mounted transformers are available in single phase and three phase configurations.

Pad Mounted Transformer: the transformer unit securely enclosed in to steel cabinet mounted on concrete pad.

Pad, packet assembler/disassembler. : (in an x25 packet-switched network) a device used to interface non-x25 devices to an x25 network; it may be synchronous or asynchronous, single or multiple channel.

Padding: The process of adding metal to a cross section of a casting wall, usually extending from a riser, to ensure adequate feed to a localized area where a shrink would occur if the added metal were not present.

Pair: Two wires, twisted together with a reciprocal color code.

Palladium: Chemical symbol Pd. A major component in the production of petrochemical catalysts.

Pancake Forging: A rough forged shape which may be obtained quickly with a minimum of tooling. It usually requires considerable machining to attain the finish size.

Panel (1). : In visual signalling systems. Specially shaped and/or coloured cloth or other material displayed in accordance with a prearranged code to convey messages. Also see code.

Panel (2). : A sub-division of the jack field of a switchboard section.

Panel (3). : A plate or slab upon which apparatus, controls and/or measuring instruments are mounted.

Panel (4). : A group of apparatus assembled and wired on a mounting plate.

Panel Spalling Test: A test using a panel of the refractory being tested to provide a reference to spalling behavior.

panelboard: A single panel or group of panel units designed for assembly in the form of a single panel, including buses and automatic overcurrent devices, and equipped with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall, partition, or other support; and accessible only from the front.

Panelboard: A single panel or group of panel units designed for assembly in the form of a single panel includes buses and may come with or without switches and/or automatic overcurrent protective devices for the control of light, heat, or power circuits of individual as well as aggregate capacity. It is designed to be placed in a cabinet or cutout box that is in or against a wall or partition and is accessible only from the front.

Panic Button: A small control button used in situations that require stopping the line without losing power to the line.

Panoramic Analyzer: An instrument for analyzing sounds and displaying the results either on an oscilloscope or a graph.

Panoramic indicator. : Auxiliary equipment, used with a receiver, which presents a visual

indication of all signals contained within the frequency coverage of the associated receiver. See also adapter, panoramic.

Panoramic receiver. : A receiver of very wide frequency coverage with integral or auxiliary panoramic indicator.

Pans: The area beneath the conveyor belts in the coal bucket area.

paper: Normally consists of sheets of cellulose, mainly obtained from wood pulp from which lignin and other non-cellulosic materials have been removed.

Paper Drum: Paper insert placed on the reel around which the coil is wound. The drum is used to eliminate damage in the center of the coil. Certain customers may require that coils are to be shipped with this paper drum.

Paper Interleaved: To prevent damage to the surface during shipment, handling or storage. The material is frequently coiled with a large roll of paper paid off at the same time so that between each wrap of metal there is a gap of paper. This paper between the steel wraps prevents the surface of the metal from rubbing against each other to spoil the surface.

Papping Plate: A metal plate attached to a pattern to prevent injury to the pattern and assist in loosening it from the sand.

Parabolic antenna. : An antenna provided with a reflector having the characteristic that radio frequency waves emitted from a focal point will be reflected into space along parallel paths thus creating a narrow beam.

Parabolic dish: A high-temperature (above 180 degrees Fahrenheit) solar thermal concentrator, generally bowl-shaped, with two-axis tracking.

Parabolic trough: A high-temperature (above 180 degrees Fahrenheit) solar thermal concentrator with the capacity for tracking the sun using one axis of rotation.

Paracril: Uniroyal tradename for nitrile rubber/PVC blend usually used for jacketing. (See EZC and NBR/PVC)

Paraffin (oil): A light-colored, wax-free oil obtained by pressing paraffin distillate.

Paraffin (wax): The wax removed from paraffin distillates by chilling and pressing. When separating from solutions, it is a colorless, more or less translucent, crystalline mass, without odor and taste, slightly greasy to touch, and consisting of a mixture of solid hydrocarbons in which the paraffin series predominates.

Paraffinic hydrocarbons: Saturated hydrocarbon compounds with the general formula C_nH_{2n+2} containing only single bonds. Sometimes referred to as alkanes or natural gas liquids.

parallel: Two or more elements are connected in parallel if they are connected to the same pair of nodes. parallel elements have the same voltage across them.

Parallel : Setting on Welder) Temperature setting on transformer used to weld heavy (>.040) gauge steel.

Parallel circuit: A circuit with two or more loads (or sources) connected such that all have the same voltage but different currents. Each load can be operated independent of the others. Parallel sources should have equal voltage ratings.

Parallel Connection: In the case of DC circuits, a way of joining two or more electrical devices or wires by connecting positive leads and negative leads together.

Parallel connection: A way of joining two or more electricity-producing devices (i.e., Photovoltaic cells or modules) by connecting positive leads together and negative leads

together; such a configuration increases the current.

Parallel Connection: Components connected across each others leads will be said to in parallel connections.

parallel resonance: A resonance condition usually occurring in parallel RLC circuits, where the voltage becomes a maximum for a given current.

Parallel transmission. : A technique that sends each bit simultaneously over a separate line; normally used to send data a byte (8 bits over 8 lines) at a time to a high-speed printer or other locally attached peripheral. Contrast with serial transmission.

Parametric Conjunctive Test: A conjunctive test that ascertains the range of values of each parameter for which the test meets specific performance requirements.

Parasite Power: Parasite power is the power required to overcome the drag of the body. Engineers view this as parasitic in an airframe because the passengers, cargo and pilots are not directly contributing to powered flight. The power required to overcome the bodys drag is the force required to push the air in front of the body.

Parent and its Consolidated : Entities - A parent and those firms (if any) that are affiliated with the parent entity for purposes of financial statements prepared in accordance with Generally Accepted Accounting Principles (GAAP). An individual shall be deemed to control a firm that is directly or indirectly controlled by him/her or by his/her father, mother, spouse, children, or grandchildren.

Parent and its Consolidated Entities: A parent and those firms (if any) that are affiliated with the parent entity for purposes of financial statements prepared in accordance with Generally Accepted Accounting Principles (GAAP). An individual shall be deemed to control a firm that is directly or indirectly controlled by him/her or by his/her father, mother, spouse, children, or grandchildren. See firm.

Parent Coil: A coil that has been processed to final temper as a single unit. The parent coil may subsequently be cut into two or more smaller coils or into individual sheets or plates to provide the required width and length.

Parent company: An affiliated company that exercises ultimate control over a business entity, either directly or indirectly, through one or more intermediaries.

Parent Plate: A plate that has been processed to final temper as a single unit. The parent plate may subsequently be cut into two or more smaller plates to provide the required width and length.

parity bit : An additional bit that is attached to each code group so that the total number of 1s being transmitted is either odd or even.

Parity bit. : The bit which is set to 1 or 0 in a character to ensure that the total number of 1 bits in the data field is even or odd. Or may be fixed at 1 (mark parity), fixed at 0 (space parity), or ignored (no parity).

Parity, parity check. : Addition of overhead bits to ensure that the total number of 1s in a grouping of bits is either always even for parity or always odd for odd parity. This permits detection of single errors. It may be applied to characters, transmission blocks or any convenient bit grouping.

Parkerizing: A proprietary method of producing a protective phosphate coating on ferrous metals. Parker A treatment involves immersing in a bath of acid manganese phosphate. The Parker D is a modification using acid zinc phosphate with a nitrate iron as accelerator.

Parking Bushing: A bushing that is designed to accept a 200a elbow. Parking bushings are used to "Park" a hot cable that is terminated with a 200 Amp rated elbow.

Parking Stand: A metal bracket, usually made of steel, that is used to support a parking bushing that in turn is used to "Park" a medium voltage cable that is terminated with an 200 Amp rated elbow. Parking Stands are usually furnished mounted to the front panel of 200

Parkway: Sometimes referred to as a rating for Grade Level Boxes or Covers rating. See "Incidental Light Traffic".

Parlanti Casting Process: A proprietary permanent mold process using dies of aluminum with a controlled rate of heat transfer.

Parted Pattern: A pattern made in two or more parts.

Partial: IMIS action indicating that part of the final produced coil weight is credited to one turn and the balance of the weight is credited to the next turn.

partial discharge: Discharges which are partial and are not flash overs across electrodes.

Partial requirements consumer: A wholesale consumer with generating resources insufficient to carry all its load and whose energy seller is a long-term firm power source supplemental to the consumer's own generation or energy received from others. The terms and conditions of sale are similar to those for a full requirements consumer.

Particle Count: The visual or electronic summation of the quantity of particles, grouped by size, in a fluid sample of specified size.

Particle Counter Computer: The part of the particle counter that tabulates and supplies a printout of the oil test results.

Particle Counter Sampler: The part of the particle counter which contains the sensor and related parts that the hydraulic oil passes through while being tested.

Particulate: A small, discrete mass of solid or liquid matter that remains individually dispersed in gas or liquid emissions. Particulates take the form of aerosol, dust, fume, mist, smoke, or spray. Each of these forms has different properties.

Particulate Matter: In air pollution control, solid or liquid particles, except water, visible with or without a microscope, that make up the obvious portion smoke.

Parting: The operation of cutting off a piece from a part held in the chuck of a lathe

Parting: A layer of rock within a coalbed that lies roughly parallel to the coalbed and has the effect of splitting the bed into two divisions.

Parting Agent: See Release Agent

Parting Line: A line on a pattern or casting corresponding to the separation between the cope and drag portions of a sand mold. A condition unique to stepped extrusions where more than one cross section exists in the same extruded shape. A stepped shape uses a split die for the minor or small cross section and after its removal, another die behind it for the major configuration. Slightly raised fins can appear on that portion of the shape where the two dies meet. See also "Profile, Stepped Extruded".

pascal (pa): SI unit of pressure. One pascal is equal to the force of one newton exerted on one square meter.

Pass: (1) A single transfer of metal through a stand of rolls. (2) The open space between two grooved rolls through which metal is processed. (3) The weld metal deposited in one run along the axis of a weld. (4) A term indicating the process of passing metal through a rolling mill

Pass Line: 1) Measurement used to level all rolls. 2) The travel direction through which a strip is processed. When out of alignment, it requires adjusting so that the coil can be properly processed.

Passage: A hole through which fluid is passed in a fluid power system.

Passenger-miles traveled: The total distance traveled by all passengers. It is calculated as the product of the occupancy rate in vehicles and the vehicle miles traveled.

Passivated Tin Plate: Tin plate that has been chemically treated to control tin oxide formation and growth.

Passivation: A chemical reaction that eliminates the detrimental effect of electrically reactive atoms on a photovoltaic cell's surface.

Passivation : The changing of the chemically active surface of a metal to a much less reactive state. Contrast with activation.

Passivator : An inhibitor which changes the potential of a metal to a more cathodic value.

Passive detection. : In electronic warfare. The process of detecting an electromagnetic emitter by using the energy emitted.

passive element: An element which does not generate electricity but either consumes it or stores it.

Passive Infrared: (P.I.R.) Typically this term is used in reference to detecting infrared. A P.I.R. detector functions as a receiver of infrared emitted from a transmitter, such as the human body.

Passive solar heating: A solar heating system that uses no external mechanical power, such as pumps or blowers, to move the collected solar heat.

Passive solar home: A house that uses a room or another part of the building as a solar collector.

Passivity : The property of some metals to become abnormally inactive towards certain reagents.

Paste Extrude: An extrusion method whereby the extrudable material is in a fine powder form mixed with a lubricant and is forced through a die of given size, without heat, as opposed to melt extrude.

Pasted Plate (Battery): Paste in which the active material is applied as a paste to a conductive grid.

Patch Cord: A length of cable, with connectors on the ends, used to join telecommunications links at a cross-connect.

Patch Panel: Connecting hardware that can be accessed with patch cords to form cross-connection (usually located in a telecommunications closet) used to modify, reconfigure, or administer communications networks.

Patching: Repair of a furnace lining; repair of a mold core.

Patenting: Treatment of steel, usually in wire form, in which the metal is gradually heated to about 1830 (degrees) F., with subsequent colling, usually in air, in a bath of molten lead, or in a fused salt mixture held between 800 (degrees) F. and 1050 (degrees) F.

Pathfinders. : A radar device used for navigating or homing to an object when visibility precludes accurate visual navigation.

Pattern Draft: The taper on vertical elements in a pattern which allows easy separation of pattern from compacted sand mixture.

Pattern Layout: Full sized drawing of a pattern showing its arrangement and structure features.

Pattern Welding: A process in which strips or other small sections of iron or steel are twisted together and then forge welded. Homogeneity and toughness are thereby improved. A regular decorative pattern can be developed in the final product. Commonly used for making swords as early as the 3rd century A.D.

Patternmaker: A craftsman engaged in production of foundry patterns from wood, plastic, or metals, such as aluminum, brass, etc.

Pay Off: Entry end unwrapping of coil and the beginning of the production process.

Payables to municipality: The amounts payable by the utility department to the municipality or its other departments that are subject to current settlement.

payback period: The length of time it takes for the savings received to cover the cost of implementing the technology.

Payment method for utilities: The method by which fuel suppliers or utility companies are paid for all electricity, natural gas, fuel oil, kerosene, or liquefied petroleum gas used by a household. Households that pay the utility company directly are classified as "all paid by household." Households that pay directly for at least one but not all of their fuels used and that has at least one fuel charge included in the rent were classified as "some paid, some included in rent." Households for which all fuels used are included in rent were classified as "all included in rent." If the household did not fall into one of these categories, it was classified as "other." Examples of households falling into the "other" category are (1) households for which fuel bills were paid by a social service agency or a relative, and (2) households that paid for some of their fuels used but paid for other fuels through another arrangement.

Pay-Off: The process of feeding a cable or wire from a bobbin, reel, or other packages. Also a device used for paying out wire or cable into a piece of equipment or machinery.

Payoff End: The entry end of the line.

Payoff Reel: Reel on which the coil to be processed is loaded. This reel is sometimes referred to as the entry end reel.

PBR: Performance-Based Rates

PBR: pebble-bed reactor

PBX: (Private Branch Exchange) A telephone switching device serving a specific Customer.

PBX (Private Branch Exchange): A telephone switching system serving one organization or business, which is connected to the public telephone system.

pbx, private branch exchange. : A manual, user-owned telephone exchange. Sometimes used in a general sense to include both pbxs and pabxs.

PC Card: A credit cardsized peripheral that plugs into personal computers to expand RAM memory, add a modem, network card, hard drives, and other various PC devices. Three types of card have been standardized by the PCMCIA Type I, Type II, and Type III. They have

PC Card: PC Card is a configuration for computer peripheral interface designed as a standard for memory-expansion cards for computer storage.

PCB: PolyChlorinated Biphenyl

PCB: Printed circuit board.

PCB Assembly: Printed circuit boards (PCB) are used extensively in modern electronics and computer components and are often used to modularize specific functions. Examples of this

use are the individual PCB cards used in computers such as sound and video cards. Many vendors offer PCB assembly services to design and manufacture custom PCB components. In order to ensure high quality components, PCB assembly providers often follow standard procedures and practices such as ISO-9001.

PCB Design Layout: Printed circuit boards (PCB) are used extensively in modern electronics and computer components and are often used to modularize specific functions. Examples of this use are the individual PCB cards used in computers such as sound and video cards. Many vendors offer PCB Design Layout services for custom PCB components. In order to ensure high quality components, PCB Design Layout providers often follow standard procedures and practices such as ISO-9001.

PCB Fabrication: Printed circuit boards (PCB) are used extensively in modern electronics and computer components and are often used to modularize specific functions. Examples of this use are the individual PCB cards used in computers such as sound and video cards. Many vendors offer PCB Fabrication services for custom PCB components. In order to ensure high quality components, PCB Fabrication providers often follow standard procedures and practices such as ISO-9001. PCB units are often fabricated using surface mount or through-hole procedures, though a mix of the two is also used by many vendors.

PCB Mounting Connectors: Printed circuit boards (PCB) are used extensively in modern electronics and computer components and are often used to modularize specific functions. Examples of this use are the individual PCB cards used in computers such as sound and video cards. A PCB mounting connector is a pinned connection device used to interconnect the PCB device with other components. The design of the mounting connector varies, depending on the type of connection and cabling requirements.

PCB Terminals: Printed circuit boards (PCB) are used extensively in modern electronics and computer components and are often used to modularize specific functions. Examples of this use are the individual PCB cards used in computers such as sound and video cards. A PCB terminal block is a component mounted to the circuit board for the purpose of connecting multiple wires together. There are many different types of terminal blocks and the selection is based on the number of wires being connected at both the input and output and the type of termination required. Typical termination options are screw clamps, spring clamps, tab/blade terminals and insulation displacement connections.

PCC: Point of Common Coupling.

PCE: Pyrometric Cone Equivalent

PCG: Portable mine cable with power, control and ground conductors.

PCI: Peripheral Component Interconnect. Selfconfiguring PC local bus.

PCI Express: Peripheral Component Interconnect Express. It is high-speed serial computer expansion bus.

Pcm, plug-compatible machine. : Term used to describe a device which can be directly substituted for an original manufacturer's device; the pcm device is usually an improvement over the original device - less expensive, more fully featured, or both.

Pcm, pulse code modulation. : A modulation technique used to convert analogue voice signals into digital form. Used for voice multiplexing on t1 circuits and megastream services.

PCMCIA: Personal Computer Memory Card International Association. Trade association founded in 1989 to establish standards for expansion cards for portable computers (See PC

Card).

PCMCIA: Personal Computer Memory Card International Association

PD: Rubber-insulated stranded conductors with cotton braid over each. Conductors twisted with braid overall. Light duty, dry locations on appliances. 300V

PDN: (Public Data Network) A network established and operated for the specific purpose of providing data transmission services to the public.

Pdn, packet data network. : Often used to mean packet-switched network (but see entry below).

Pdn, public data network. : A network established and operated by a ptt, common carrier, or private operating company for the specific purpose of providing data communications services to the public. May be a packet-switched network or a digital network such as dds or bt's public data network - pdn.

PE: Polyethylene. PE is a thermoplastic wire and cable insulating material that is also used for cable jacketing.

peak clipping : Peak clipping is used to reduce a utility's system peak, reducing the need to operate peaking units with relatively high fuel costs. Peak clipping is pursued only when the resources are not expected to be able to meet the impending load requirements.

Peak Current: The short duration peak current rating of a surge suppression device.

peak day: The day of highest customer demand for electricity during a year.

Peak day withdrawal: The maximum daily withdrawal rate (Mcf/d) experienced during the reporting period.

Peak demand: The maximum load during a specified period of time.

Peak Demand : Amount of power purchased for the 30 minute periods during what are known as peak hours. Peak hours are 7 00 am to 10 00 pm, Monday through Saturday. All other hours are off peak.

peak demand : The maximum load during a specified period of time.

Peak Earnings: The ultimate earnings level of a company at the top of the business cycle. This is the expected profit during the time of the highest commodity demand and the strongest product pricing.

peak factor: Ratio of the peak value to the r.m.s. value of an alternating waveform.

peak inverse voltage : In an electron tube, the maximum negative voltage that can be applied to the plate without danger of arc-over. In a semiconductor diode, the maximum reverse bias voltage that can be applied without reaching the zener (or breakdown) voltage.

Peak kilowatt: One thousand peak watts.

Peak Let-Through Current, Ip: The instantaneous value of peak current let through by a current-limiting fuse, when it operates in its current limiting range.

Peak load: The maximum load during a specified period of time.

Peak load month: The month of greatest plant electrical generation during the winter heating season (Oct-Mar) and summer cooling season (Apr-Sept), respectively.

Peak load plant: A plant usually housing old, low-efficiency steam units, gas turbines, diesels, or pumped-storage hydroelectric equipment normally used during the peak-load periods.

Peak load; Peak demand: The maximum load, or usage, of electrical power occurring in a given period of time, typically a day.

Peak megawatt: One million peak watts.

Peak power: Power generated by a utility unit that operates at a very low capacity factor; generally used to meet short-lived and variable high demand periods.

peak shaving: Techniques used by electric utilities to lower the peak demand on the system.

Peak Time: The time during which the sheets of metal are held at the recommended temperature for full cure is known as the Peak Time.

Peak to Peak: The amplitude of the ac wave form from its positive peak to its negative peak.

Peak to Peak: the difference between the maximum positive and the maximum negative amplitudes of a waveform is called peak to peak

Peak Torque: Many types of loads such as reciprocation compressors have cycling torques where the amount of torque required varies depending on the position of the machine. The actual maximum torque requirement at any point is called the peak torque requirement. Peak torques are involved in things such as punch presses and other types of loads where an oscillation torque requirement occurs.

peak value: The highest or maximum value of an alternation of alternating current or voltage. This peak value occurs twice during each cycle.

Peak Voltage: The maximum instantaneous voltage.

Peak watt: A manufacturer's unit indicating the amount of power a photovoltaic cell or module will produce at standard test conditions (normally 1,000 watts per square meter and 25 degrees Celsius).

Peak watts (Wp): See 'Photovoltaic peak watt.'

peak : Maximum value of an alternating or other waveform.

peak : Period of relatively high system demand.

Peaking capacity: Capacity of generating equipment normally reserved for operation during the hours of highest daily, weekly, or seasonal loads. Some generating equipment may be operated at certain times as peaking capacity and at other times to serve loads on an around-the-clock basis.

peaking capacity: Capacity of generating plants normally reserved for operation during the hours of highest daily, weekly, or seasonal loads.

peaking plants: power plants that operate for a relatively small number of hours, usually during peak demand periods. Such plants usually have high operating costs and low capital costs.

peak-to-peak value: The maximum voltage change occurring during one cycle of alternating voltage or current. The total amount of voltage between the positive peak and the negative peak of one cycle or twice the peak value.

Peat: Peat consists of partially decomposed plant debris. It is considered an early stage in the development of coal. Peat is distinguished from lignite by the presence of free cellulose and a high moisture content (exceeding 70 percent). The heat content of air-dried peat (about 50 percent moisture) is about 9 million Btu per ton. Most U.S. peat is used as a soil conditioner. The first U.S. electric power plant fueled by peat began operation in Maine in 1990.

pebi(pi): Binary multiple prefix corresponding to petabinary or 250 or (210)5 or 10245. [IEC 1998]

PED: Power Electronic Device.

Pedestrian Loading: Refers to a grade level Reinforced Polymer Concrete or Fiberglass

Reinforced Plastic Box or Cover loading applied by pedestrian traffic.

Pedestrian Walkway (Lighting): A public walk for pedestrian traffic not necessarily within the rightofway for vehicular traffic. Included are skywalks (pedestrian overpasses), subwalks (pedestrian tunnels), walkways giving access to parks or block interiors and midblock street cross

Peel: The process by which several outside laps of a coil are taken off to bring it down to gauge.

Peeler Table: The 32 extension connected to the threading table to assist in threading hot rolled coils.

Peeling: Separation of the zinc coating from the steel strip.

Peen: Peening action obtained by impact of metal shot, often used to improve fatigue properties by putting the surface in compression.

Peeners: Automatic chisels on welder wheels that remove metal slag.

Peening: Mechanical working of metal by hammer blows or shot impingement.

Pellets: Iron ore or limestone particles are rolled into little balls in a balling drum and jardened by heat. (See Agglomerating Processes)

PEN conductor : A conductor combining the functions of both protective conductor and neutral conductor.

Pencil Core: A core projecting to the center of a blind riser allowing atmospheric pressure to force out feed metal.

Penetrameter: A strip of metal with stepped thickness variation and with holes at varying depths; used in radiography to indicate the sensitivity of the radiograph.

Penetrant Inspection: A method of non destructive testing for determining the existence and extent of discontinuities that are open to the surface in the part being inspected. The indications ore made visible through the use of a dye or fluorescent chemical in the liquid employed as the inspection medium.

Penetration: Condition where molten metal has penetrated into the sand, resulting in a mixture of metal and sand adhering to the casting.

Pennants, numeral. : Pennants used in visual communications to represent the numbers 0 through 9.

Pennsylvania Anthracite: . All mines in the following counties Carbon, Columbia, Dauphin, Lackawanna, Lebanon, Luzerne, Northumberland, Schuylkill, Sullivan, and Susquehanna. All anthracite mines in Bradford County.

Pennsylvania Bituminous: . All mines located in the following counties Allegheny, Armstrong, Beaver, Bedford, Butler, Cambria, Clarion, Clearfield, Elk, Fayette, Greene, Indiana, Jefferson, Lawrence, Lycoming, Somerset, Venango, Washington, and Westmoreland, and all bituminous mines in Bradford County.

Pentanes plus: A mixture of liquid hydrocarbons, mostly pentanes and heavier, extracted from natural gas in a gas processing plant. Pentanes plus is equivalent to natural gasoline.

per unit pu: per unit is a method of expressing the value of a quantity in terms of a reference or base quantity. It is very similar to percentage, except that there is no multiplying constant of 100.

Percent Conductivity: The conductivity of a material expressed as a percentage of that of copper.

Percent difference: The relative change in a quantity over a specified time period. It is calculated as follows the current value has the previous value subtracted from it; this new number is divided by the absolute value of the previous value; then this new number is multiplied by 100.

Percent Reduction: Expression of reduction in gauge during any rolling process. Percent reduction equals starting gauge minus finish gauge after rolling divided by starting gauge times 100.

Percent utilization: The ratio of total production to productive capacity, times 100.

Perfluorocarbons (PFCs): A group of man-made chemicals composed of one or two carbon atoms and four to six fluorine atoms, containing no chlorine. PFCs have no commercial uses and are emitted as a byproduct of aluminum smelting and semiconductor manufacturing. PFCs have very high 100-year Global Warming Potentials and are very long-lived in the atmosphere.

Perfluoromethane: A compound (CF₄) emitted as a byproduct of aluminum smelting.

performance attributes : Performance attributes measure the quality of service and operating efficiency. Loss of load probability, expected energy curtailment, and reserve margin are some of the performance attributes.

Periclase: Natural magnesia in nodular form, formed by heating.

Perigee. : The least distant point from the centre of the earth to an orbit around it.

period: Duration between repetitions of a waveform cycle. It is also equal to the inverse of frequency).

Period: The time required for the current to pass through one cycle.

Period : The time in seconds that is required to complete one cycle of a waveform.

periodic function: A function which repeats itself after a definite period.

Peripheral Component Interconnect (PCI): High-performance expansion bus architecture common in modern desktop PCs.

Peripheral Hoses: Hoses that carry recycled water from the peripheral prequench spray header to the area of the scrubber known as the wet elbow.

Peristaltic Pumps: A pump is a mechanical device used to drive a fluid or gas from one place to another. In a peristaltic pump, the fluid is enclosed in a flexible tube that passes through a circular arc in the pump casing. Centered in the circular arc is a shaft with a roller bar that rotates around the pump casing. As the roller bar reaches the pump inlet, it compresses the flexible tube, forcing the liquid along the tube, ahead of the roller bar, until it reaches the pump exit. Peristaltic pumps are commonly used in industries such as the medical field where it is desired that the fluid not come in contact with any of the pump components.

Peritectic: An isothermal reversible reaction in which a liquid phase reacts with a solid phase to produce another solid phase.

Peritectic Grade: Crack sensitive grade of steel with .08 to .16% Carbon.

Perlite: A highly siliceous volcanic rock which can be expanded by heating into a porous mass of particles. Perlite can be used as an insulation in foundry sand mixtures. Not to be confused with Pearlite.

Permalloy: Nickel alloys containing about 20 to 60% Fe, used for their high magnetic permeability and electrical resistivity.

Permanent echo. : Any dense and fixed radar return caused by reflection of energy from the

earth's surface. Distinguished from "ground clutter" by being from definable locations rather than large areas.

permanent magnet moving coil meter or pmmc : [see moving coil meter]

Permanent Mold: A metal mold of two or more parts; not an ingot mold. It is used repeatedly for the production of many casting of the same form.

Permanent Set: Non elastic or plastic, deformation of metal under stress, after passing the elastic limit.

Permanently discharged fuel: Spent nuclear fuel for which there are no plans for reinsertion in the reactor core.

Permeability: The ability of a magnetic material to conduct magnetic lines of force.

Permeability: The ease with which fluid flows through a porous medium.

permeability: A measure of how easily magnetic lines of force can pass through a material. The permeability of a material is defined as the constant of proportionality between the magnetic flux density and the magnetic field. It is a constant for a given magnetic material in the linear region.

permeability of free space: (ϵ_0) = 8.854×10^{-12} F/m

permeance: Inverse of reluctance. [Unit H]

permittivity: The permittivity of a material is defined as the constant of proportionality between the electric flux density and the electric field. It is a constant for a given dielectric.

permittivity of free space: (ϵ_0) = 4×10^{-7} H/m

Permutation table. : A table designed for the systematic construction of code groups. It may also be used to correct garbles in groups of code text.

Persian Gulf: The countries that surround the Persian Gulf are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.

Persistent. : (in lan technology) a term used to describe a csma lan in which the stations involved in a collision try to retransmit almost immediately; p-persistent where p=1 (hence, also called 1-persistent). See non-persistent and one (1) persistent.

Person: An individual, a corporation, a partnership, an association, a joint-stock company, a business trust, or an unincorporated organization.

Personal computer: A microcomputer for producing written, programmed, or coded material; playing games; or doing calculations. Laptop and notebook computers are excluded for the purposes of EIA surveys.

Personal Computer Memory Card International Association: An expansion card form factor popular in laptop and notebook computers.

Personal computer. : A microcomputer with an end user-oriented application program (used by data processing professionals and non-professionals alike) for an assortment of functions.

Personal sign. : Signs composed of one or more letters (normally initials) used when endorsing station records and messages to indicate individual responsibility of operating and supervisor personnel.

Personnel security.: The application of security measures, in order to ensure that all personnel who have access to information have the required need-to-know and have the appropriate security clearance. (nato)

Person-year: One whole year, or fraction thereof, worked by an employee, including contracted man power. Expressed as a quotient (to two decimal places) of the time units

worked during a year (hours, weeks, or months) divided by the like total time units in a year. For example 80 hours worked is 0.04 (rounded) of a person-year; 8 weeks worked is 0.15 (rounded) of a person-year; 12 months worked is 1 person-year. Contracted manpower includes survey crews, drilling crews, consultants, and other persons who worked under contract to support a firm's ongoing operations.

peta (P) : Decimal multiple prefix corresponding to 10¹⁵.

Petrochemical feedstocks: Chemical feedstocks derived from refined or partially refined petroleum fraction, principally for use in the manufacturing of chemicals, synthetic rubber, and a variety of plastics.

Petrochemicals: Organic and inorganic compounds and mixtures that include but are not limited to organic chemicals, cyclic intermediates, plastics and resins, synthetic fibers, elastomers, organic dyes, organic pigments, detergents, surface active agents, carbon black, and ammonia.

Petroleum: A broadly defined class of liquid hydrocarbon mixtures. Included are crude oil, lease condensate, unfinished oils, refined products obtained from the processing of crude oil, and natural gas plant liquids. Note Volumes of finished petroleum products include non hydrocarbon compounds, such as additives and detergents, after they have been blended into the products.

petroleum: A mixture of hydrocarbons existing in the liquid state found in natural underground reservoirs often associated with gas. petroleum includes crude oil, fuel oil, kerosene and jet fuel.

petroleum (crude oil): A naturally occurring, oily, flammable liquid composed principally of hydrocarbons. Crude oil is occasionally found in springs or pools but usually is drilled from wells beneath the earth's surface.

Petroleum Administration for Defense District (PADD): A geographic aggregation of the 50 States and the District of Columbia into five Districts, with PADD 1 further split into three subdistricts. The PADDs include the States listed below

Petroleum and other liquids: All petroleum including crude oil and products of petroleum refining, natural gas liquids, biofuels, and liquids derived from other hydrocarbon sources (including coal to liquids and gas to liquids). Not included are liquefied natural gas (LNG) and liquid hydrogen. See liquid fuels.

Petroleum coke: See Coke (petroleum).

Petroleum coke, catalyst: The carbonaceous residue that is deposited on the catalyst used in many catalytic operations (e.g., catalytic cracking). Carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon producing heat and CO₂. The carbonaceous residue is not recoverable as a product.

Petroleum coke, marketable: Those grades of coke produced in delayed or fluid cokers that may be recovered as relatively pure carbon. Marketable petroleum coke may be sold as is or further purified by calcining.

Petroleum consumption: See Products supplied

Petroleum Fluid: A hydraulic oil (fluid) that is made from a petroleum base. Normally will support combustion if heated to a specific temperature.

Petroleum imports: Imports of petroleum into the 50 states and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. territories

and possessions. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

Petroleum jelly: A semi-solid oily product produced from de-waxing lubricating oil basestocks.

Petroleum products: Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum refinery: An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Petroleum stocks, primary: For individual products, quantities that are held at refineries, in pipelines and at bulk terminals that have a capacity of 50,000 barrels or more, or that are in transit thereto. Stocks held by product retailers and resellers, as well as tertiary stocks held at the point of consumption, are excluded. Stocks of individual products held at gas processing plants are excluded from individual product estimates but are included in other oils estimates and total.

PF: Power Factor

PFCs: See Perfluorocarbons

PG: Portable mine cables having power and ground conductors. 600V

PGA: Purchased Gas Adjustment

pH: A measure of acidity or alkalinity. A pH of 7 represents neutrality. Acid substances have lower pH. Basic substances have higher pH.

Ph : A term used to describe the quantity of cyclic electrical power sources in a high voltage system.

Ph : Chemical symbol for lead.

Phase: A time-based relationship between a periodic function and a reference.

Phase: A particular stage or point of advancement in an electrical cycle. The fractional part of the period through which the time has advanced measured from some arbitrary point usually expressed in electrical degrees where 360° represents one cycle.

Phase: Phase is the indication of the type of power supply for which the motor is designed. Two major categories exist; the single phase and three phase. There are some very spotty areas where two phase power is available but this is very insignificant.

Phase Angle: The angular displacement between a current and voltage waveform, measured in degrees or radians.

Phase Angle Transducer: A transducer used for the measurement of the phase angle between two a.c. electrical quantities having the same frequency.

Phase Angle Transducer: The transducer measures the phase angle between current and voltage of a single or 3 phase balanced network having a sine wave form. The output signal, in the form of a load independent DC current or voltage, is proportional to the phase angle between the 2 measured quantities current and voltage.

phase conductor : A conductor of an a.c. system for the transmission of electrical energy other than a neutral conductor, a protective conductor or a PEN conductor. The term also means the equivalent conductor of a d.c. system unless otherwise specified in the Regulations.

Phase Control: The electronic process of chopping or turning on and off the AC line every half line cycle. It is commonly used in dimming and fan speed control applications.

Phase Diagram: A graphic representation of the equilibrium temperature and composition limits of phase fields reactions in an alloy system. In a binary system, temperature is usually the ordinate and composition the abscissa. Ternary and more complex systems require several two dimensional diagrams to show the temperature composition variables completely. In alloy systems, pressure is usually considered constant, although it may be treated as an additional variable.

phase difference: Difference in phase angle between two sinusoids or phasors.

Phase Difference Lead and Lag: The difference in phase between two sinusoidal waves having the same period, usually expressed in electrical degrees. The voltage wave is generally taken as the reference, so in an inductive circuit the current lags the voltage, and in a capacitive circuit the current leads the voltage.

Phase Modifier or Phase Advancer: A machine which supplies leading or lagging reactive volt amperes to the system to which it is connected. Phase modifiers may be either synchronous or asynchronous.

phase modulation: Modulation of the phase angle of a sinusoidal carrier by an amount proportional to the instantaneous value of the modulating wave.

phase modulation. : One of 3 basic ways (see also am and fm) to add information to a sine wave signal; the phase of the sine wave, or carrier, is modified in accordance with the information to be transmitted. With only discrete changes in phase, this technique is known as phase shift keying (psk).

Phase Rotation: Phase rotation defines the rotation in a PolyPhase System and is generally stated as "123", counterclockwise rotation. Utilities in the United States use "ABC" to define their respective phase names in place "123". However some refer to their rotation as "ABC".

phase sequence or phase rotation: The time order in which the voltages (or currents) pass through their respective maximum values (or any other definable position).

Phase Shift: A time difference between the input and output signal of a control unit or system, usually measured in degrees.

Phase Shift: A change in phase of a voltage or current after passing through a circuit or cable

Phase shift keying. : Angle modulation in which each significant condition in a modulating discrete signal is represented by a specified phase of a periodic sinusoidal oscillation. Abbreviated psk.

phase voltage: The voltage between the phase and neutral of a three phase system is defined as the phase-to-neutral voltage or more commonly as the phase voltage. For a balanced three phase system, the phase voltage is $1/\sqrt{3}$ times the line-to-line voltage. The voltage across one arm of either a star-connected load or a delta-connected load is also sometimes referred to as the voltage across a phase or phase voltage. This latter quantity is the same as the phase-to-neutral voltage for a star-connected load, and the line-to-line voltage for a delta-connected load.

Phase : A time relationship between two electrical quantities.

Phased array. : An array of dipoles in which the phase of the signal feeding each dipole is varied in such a way that antenna beams can be formed and scanned very rapidly in azimuth and elevation without requiring physical movement of the antenna. See antenna array.

phasor: Representation of a sinusoid on the Argand diagram in the form of the magnitude (usually r.m.s.) and phase angle. It may be represented as a complex number in either cartesian co-ordinates or polar co-ordinates.

Phenolic: A type of resin made from a condensation reaction of phenols and aldehydes. Resultant films have a high degree of chemical resistance with limited flexibility properties.

Phenolic Resin (One Step): A resin made by the polymerization of a phenol with an aldehyde; used a binder for cores and sand molds. See Urea Form aldehyde Resin

phosphor: A substance which is capable of luminescence. That is storing energy and later releasing it in the form of light.

Phosphor Bronze: Copper base alloys, with 3.5 to 10% of tin, to which has been added in the molten state phosphorus in varying amounts of less than 1% for deoxidizing and strengthening purposes. Because of excellent toughness, strength, fine grain, resistance to fatigue and wear, and chemical resistance, these alloys find general use as springs and in making fittings. It has corrosion resisting properties comparable to copper.

Phosphor Bronze Strip: A copper base alloy containing up to 10% tin, which has been deoxidized with phosphorus in varying amounts of less than 1%. Temper is imparted by cold rolling, resulting in greater tensile strength and hardness than in most copper base alloys or either of its alloying elements copper or tin. The various tempers from One Number Hard to Ten Numbers Hard are classified in hardness by the number of B&S Gages reduction in dimension from the previous soft or as annealed state. Phosphor Bronze is not heat treatable for purposes of hardness development. It does not withstand elevated temperatures very well and should not be used in service above 225 (degrees) F. even after stress relieving treatment at 325 (degrees) to 350 (degrees) F. It has excellent electrical properties, corrosion resistant comparable to copper; great toughness and resistance to fatigue. Rated good for soft soldering, silver alloy brazing, oxyacetylene, carbon arc and resistance welding.

Phosphorous (P): A chemical element, atomic number 15, used as a dopant in making n-semiconductor layers.

Phosphorus: (Chemical symbol P) Element No. 15 of the periodic system; atomic weight 30.98. Non metallic element occurring in at least three allotropic forms; melting point 111 (degrees) F.; boiling point 536 (degrees) F.; specific gravity 1.82. In steels it is usually undesirable with limits set in most specifications. However, it is specified as an alloy in steel to prevent the sticking of light gage sheets; to a degree it strengthens low carbon steel; increases resistance to corrosion, and improves machinability in free cutting steels. In the manufacture of Phosphor Bronze it is used as a deoxidizing agent.

photocell or photo-electric cell: Device used for the detection and measurement of light.

Photocurrent: An electric current induced by radiant energy.

photodiode: A reverse biased diode that is sensitive to incoming light.

Photoelectric Sensor: A light sensitive device that converts visible and infrared light waves into an electrical signal.

Photoelectrochemical cell: A special kind of photovoltaic cell in which the electricity

produced is used immediately within the cell to produce a useful chemical product, such as hydrogen. The product material is continuously withdrawn from the cell for direct use as a fuel or as an ingredient in making other chemicals, or it may be stored and used subsequently.

Photoetch Quality: Product description for USSM flatroll coils which requires excellent finish and critical flatness.

Photomicrograph: A photographic reproduction of any object magnified more than ten diameters. The term micrograph may be used.

photon: A quantum of electromagnetic radiation which has zero rest mass and energy equal to the product of the frequency of radiation and planck's constant.

Photon: A particle of light that acts as an individual unit of energy.

Photosynthesis: The manufacture by plants of carbohydrates and oxygen from carbon dioxide and water in the presence of chlorophyll, with sunlight as the energy source. Carbon is sequestered and oxygen and water vapor are released in the process.

Photovoltaic: An interconnected system of photovoltaic modules that function as a single electricity producing unit. The modules are assembled in a discrete structure, with common mechanical support or mounting. In small systems, an array can consist of a single modu

Photovoltaic: Abbreviation for photovoltaic(s).

Photovoltaic: the method of converting the solar energy in to the electricity by use of semiconductors. It is renewable source of energy.

Photovoltaic (Photovoltaic): Pertaining to the direct conversion of light into electricity.

Photovoltaic (Photovoltaic) array: An interconnected system of Photovoltaic modules that function as a single electricity-producing unit. The modules are assembled as a discrete structure, with common support or mounting. In smaller systems, an array can consist of a single module.

Photovoltaic (Photovoltaic) cell: The smallest semiconductor element within a Photovoltaic module to perform the immediate conversion of light into electrical energy (dc voltage and current).

Photovoltaic (Photovoltaic) conversion efficiency: The ratio of the electric power produced by a photovoltaic device to the power of the sunlight incident on the device.

Photovoltaic (Photovoltaic) device: A device that converts light directly into DC electricity.

Photovoltaic (Photovoltaic) efficiency: The ratio of electric power produced by a cell at any instant to the power of the sunlight striking the cell.

Photovoltaic (Photovoltaic) generator: The total of all Photovoltaic strings of a Photovoltaic power supply system, which are electrically interconnected.

Photovoltaic (Photovoltaic) module: The smallest environmentally protected, essentially planar assembly of solar cells and ancillary parts, such as interconnections, terminals, [and protective devices such as diodes] intended to generate DC power under unconcentrated sunlight. The structural (load carrying) member of a module can either be the top layer (superstrate) or the back layer (substrate). [UL 1703]

Photovoltaic (Photovoltaic) panel: often used interchangeably with Photovoltaic module (especially in one-module systems), but more accurately used to refer to a physically connected collection of modules (i.e., a laminate string of modules used to achieve a required

voltage and current).

Photovoltaic (Photovoltaic) peak watt: Maximum "rated" output of a cell, module, or system. Typical rating conditions are 0.645 watts per square inch (1000 watts per square meter) of sunlight, 68 degrees F (20 degrees C) ambient air temperature and 6.2×10^{-3} mi/s (1 m/s) wind speed.

Photovoltaic (Photovoltaic) system: A complete set of components for converting sunlight into electricity by the photovoltaic process, including the array and balance of system components.

Photovoltaic and solar thermal energy (as used at electric utilities): Energy radiated by the sun as electromagnetic waves (electromagnetic radiation) that is converted at electric utilities into electricity by means of solar (photovoltaic) cells or concentrating (focusing) collectors.

Photovoltaic Array: The smallest semiconductor element within a photovoltaic module to perform the immediate conversion of light into electrical energy (DC Voltage and DC Current).

Photovoltaic Array: An interconnected system of PV modules that function as a single electricity-producing unit. In smaller systems, an array can consist of a single module.

Photovoltaic Cell: A Photovoltaic module that uses optical elements to increase the amount of sunlight incident on a Photovoltaic cell. Concentrating arrays must track the sun. Efficiency is increased, but lifespan is decreased because of the high heat.

Photovoltaic Cell: the devices used to convert the solar energy into electric current by photovoltaic effect. These devices are the combination of semiconductor materials.

Photovoltaic cell (PVC): An electronic device consisting of layers of semiconductor materials fabricated to form a junction (adjacent layers of materials with different electronic characteristics) and electrical contacts and being capable of converting incident light directly into electricity (direct current).

Photovoltaic cell net shipments: Represents the difference between photovoltaic cell shipments and photovoltaic cell purchases.

Photovoltaic Concentrator: The ratio of electric energy produced by a photovoltaic device to the energy from sunlight incident upon the cell.

Photovoltaic Concentrator: the technology used to convert the solar energy into electric current.

Photovoltaic Conversion Efficiency: The ratio of electric power produced by a cell at any instant to the power of the sunlight striking the photovoltaic cell. This is typically 9% to 14% for commercially available cells.

Photovoltaic Efficiency: The smallest environmentally protected, essentially planar assembly of solar cells and ancillary parts, such as interconnections, terminals and protective devices such as diodes intended to generate dc power under unconcentrated sunlight. The structural

Photovoltaic module: An integrated assembly of interconnected photovoltaic cells designed to deliver a selected level of working voltage and current at its output terminals, packaged for protection against environmental degradation, and suited for incorporation in photovoltaic power systems.

Photovoltaic Module: Often used interchangeably with Photovoltaic Module. Especially in onemodule systems, but more accurately used to refer to a physically connected collection of

modules (i.e., a laminate string of modules used to achieve a required voltage and current).

Photovoltaic Panel: An autonomous or hybrid photovoltaic system not connected to a grid. The system may or may not have storage but most have require a battery.

Photovoltaic Stand-Alone System: A complete set of components for converting sunlight into electricity by the Photovoltaic process, including the array and balance of system devices.

Photovoltaic System: Refers to the conversion of light into electricity.

photovoltaic : A technology that directly converts light into electricity. The process uses modules, which are usually made up of many cells (thin layers of semiconductors).

Photovoltaics: The process or method of converting the solar energy into direct current electricity by use of semiconductors which produce the photovoltaic effect.

Photovoltaic-thermal (Photovoltaic/T) system: A photovoltaic system that, in addition to converting sunlight into electricity, collects the residual heat energy and delivers both heat and electricity in usable form. Also called a total energy system.

Physical layer. : The lowest (first) layer in the OSI model; responsible for the physical signalling, including the connectors, timing, voltages and other related matters.

Physical Metallurgy: The science concerned with the physical and mechanical characteristics of metals and alloys.

Physical Properties: Those properties familiarly discussed in physics, exclusive of those described under mechanical properties; for example, density, electrical conductivity, coefficient of thermal expansion. This term often has been used to describe mechanical properties, but this usage is not recommended.

Physical security. : That component of security which results from all physical measures necessary to safeguard classified equipment, material and documents from access thereto or observation thereof by unauthorized persons.

Physical vapor deposition: A method of depositing thin semiconductor films. With this method, physical processes, such as thermal evaporation or bombardment of ions, are used to deposit elemental semiconductor material on a substrate.

Pick: Distance between two adjacent crossover points of braid filaments. This measurement, in picks per inch, indicates completeness of coverage (the more per inch, the more complete the coverage).

Pick Off: The transfer of portions of the coating from one surface of the sheet to an adjacent surface due to poor adhesion of the coating

Pick up ratio: The ratio of the limiting values of the characteristic quantity at which the relay resets and operates. This value is sometimes called the differential relay.

Pickle Brittleness: The brittleness induced in steel when pickled in dilute acid for the purpose of removing the scale. The brittleness is commonly attributed to the absorption of hydrogen by the steel.

Pickle Only: A coil which is to be cleaned but not coated.

Pickled: Steel that has gone through the Pickler operating unit to remove mill scale or oxide.

Pickled Slit Width: Width of the coil after it has been sidetrimmed at the Pickler.

Pickler: 1) An operating unit that removes iron oxide from a hot rolled product by immersion into a hydrochloric (#3/#5 Picklers) or sulfuric acid solution. 2) The pickler tank contains 5-6% concentrations of sulfuric acid. This solution is kept at a temperature of 180-190 degrees. The purpose of the pickler is to complete the preparation of the steel for plating,

by removing any oxides from the surface.

Pickling: Removing surface oxides from metals by chemical or electrochemical reaction.

Pickling Liquor: The waste resulting from the pickling process. The liquor consists of acid and water.

Pickling Patch: A defect in tin plate, galvanized or terne plated steel due to faulty pickling, leaving areas from which the oxide has not been completely removed.

Pick-up: A relay is said to 'pickup' when it changes from the deenergized position to the energized position.

pico (p): Decimal sub-multiple prefix corresponding to one trillionth (US) or 10⁻¹².

Picofarad: One micro-microfarad.

Picral: An etchant for ferrous alloys; 4% picric acid in alcohol.

PID: A three mode control consisting of time Proportioning, Integral and Derivative rate action.

piecewise continuous waveforms: Waveforms which are essentially continuous but in which multi-values occur over finite bounds. The waveform is single-valued and continuous in pieces.

piezo electric effect: Vibration that occurs when a crystal is excited by an ac signal across its plates.

Pig: Initial post smelting casting of lead or iron. Named long ago when molten metal was poured through a trench in the ground to flow into shallow earthen holes, the arrangement looked like newborn pigs suckling. The central channel became known as the 'sow' and the molds 'pigs'.

Pig iron: Crude, high-carbon iron produced by reduction of iron ore in a blast furnace.

Pilot (message relay): Instructions appearing in message format line 1 relative to the transmission or handling of the message.

Pilot Casting: Casting produced prior to the production run to verify correctness of procedures, materials, and process to be used in production.

Pilot Channel: A means of interconnecting between relaying points for the purpose of protection.

Pilot Light: A switch with an integral lamp in the actuator which lights when the switch is in the "ON" position.

Pilot Line: A passage in a fluid power system that is used to transport a fluid at a pressure lower than the normal operating pressure to facilitate controlled shifting of spool valves.

Pilot Line: A cord or rope used to pull a heavier rope that will be used to pull a conductor into place.

Pilot Pressure: The pressure in the pilot circuit.

pilot program: A utility program offering a limited group of consumers their choice of certified or licensed energy suppliers on a one year minimum trial basis.

Pilot Valve: A valve applied to operate another valve or control. The controlling stage of a 2 stage valve.

Pilots: Natural gas fired device used to provide positive ignition of the boiler fuels.

Pin: Denoting an electrical terminal, usually in a connector. Normally a smaller termination than a lug.

P-i-n: A semiconductor device structure that layers an intrinsic semiconductor between a p-

type semiconductor and an n-type semiconductor; this structure is most often used with amorphous silicon devices.

Pin and Sleeve: Industrial wiring devices utilizing round pin-shaped blades and tubular designed sleeve contacts.

Pin Expansion Test: A test for determining the ability of tubes to be expanded or for revealing the presence of cracks or other longitudinal weaknesses, made by forcing a tapered pin into the open end of a tube.

Pin Hole Detector: Device that identifies and tabulates the number of pin holes in a coil.

Pin Holes: Microscopic imperfection of the coatings, that is, microscopic bare spots, also microscopic holed penetrating through a layer or thickness of light.

Pinch Mark: See ?Crease?.

Pinch Pass: A term applied when, after annealing, sheet or strip is lightly rolled with the object of preventing stretcher lines or kinks on subsequent cold working.

Pinch Roll: 1) Roll used to jog the strip forward and backward, and to hold the strip stationary. One is before the welder and the other is between welder and looping pit. 2) Motor driven rolls used to assist in threading coils, cutting scrap, and making loops for welds.

Pinchers: Long fern like creases usually diagonal to the direction of rolling.

Ping: Ping is a computer program that sends a packet over the internet to another computer to see if the remote computer is still responding. If the ping returns to the sending computer the remote computer is still connected.

Pinion Drives: The large gear transmissions that power the finishing mill work rolls.

Pinning: A term used to describe the condition of a file clogged with metal filings causing it to scratch the work.

Pipe: A passage in a fluid power system that is constructed of metal and conforms dimensionally to standards established by the ANSI. May be acquired by size and schedule, where increase in wall thickness does not increase the outside diameter.

Pipeline (natural gas): A continuous pipe conduit, complete with such equipment as valves, compressor stations, communications systems, and meters for transporting natural and/or supplemental gas from one point to another, usually from a point in or beyond the producing field or processing plant to another pipeline or to points of utilization. Also refers to a company operating such facilities.

Pipeline (petroleum): Crude oil and product pipelines used to transport crude oil and petroleum products, respectively (including interstate, intrastate, and intracompany pipelines), within the 50 states and the District of Columbia.

Pipeline freight: Refers to freight carried through pipelines, including natural gas, crude oil, and petroleum products (excluding water). Energy is consumed by various electrical components of the pipeline, including, valves, other, appurtenances attaches to the pipe, compressor units, metering stations, regulator stations, delivery stations, holders and fabricated assemblies.

Pipeline fuel: Gas consumed in the operation of pipelines, primarily in compressors.

Pipeline purchases: Gas supply contracted from and volumes purchased from other natural gas companies as defined by the Natural Gas Act, as amended (52 Stat. 821), excluding independent producers, as defined in Paragraph 154.91(a), Chapter I, Title 18 of the Code of Federal Regulations.

Pipeline quality natural gas: A mixture of hydrocarbon compounds existing in the gaseous phase with sufficient energy content, generally above 900 British thermal units, and a small enough share of impurities for transport through commercial gas pipelines and sale to end-users.

Pipeline, distribution: A pipeline that conveys gas from a transmission pipeline to its ultimate consumer.

Pipeline, gathering: A pipeline that conveys gas from a production well/field to a gas processing plant or transmission pipeline for eventual delivery to end-use consumers.

Pipeline, transmission: A pipeline that conveys gas from a region where it is produced to a region where it is to be distributed.

Pipelines, rate regulated: FRS (Financial Reporting System Survey) establishes three pipeline segments crude/liquid (raw materials); natural gas; and refined products. The pipelines included in these segments are all federally or State rate-regulated pipeline operations, which are included in the reporting company's consolidated financial statements. However, at the reporting company's option, intrastate pipeline operations may be included in the U.S. Refining/Marketing Segment if they would comprise less than 5 percent of U.S. Refining/Marketing Segment net PPE, revenues, and earnings in the aggregate; and if the inclusion of such pipelines in the consolidated financial statements adds less than \$100 million to the net PPE reported for the U.S. Refining/Marketing Segment.

Pitch Circle: The line (circle) of contact between two meshing gears.

Pitch Diameter: The diameter of a circle passing through the center of the conductors in any layer of a multiconductor cable.

Pitch Line: An imaginary line which passes through threads at such points that the length of the part of the line between adjacent threads is equal to the length of the line within a thread.

Pitcheblende: Uranium oxide (U₃O₈). It is the main component of high-grade African or domestic uranium ore and also contains other oxides and sulfides, including radium, thorium, and lead components.

Pitcock Valve: Small lever controlled valve.

Pitting : Sharp depressions in the surface of the metal generally attributed to localized chemical attack by a corrosive media. In stainless steels, molybdenum additions (i.e. types 316, 317, 434) help improve pitting resistance.

PL: Two rubber-insulated, parallel-laid, lamp cords with overall cotton or rayon braid. For light duty on small appliances in dry locations. 300V

Place in service: A vehicle is placed in service if that vehicle is new to the fleet and has not previously been in service for the fleet. These vehicles can be acquired as additional vehicles (increases the size of the company fleet), or as replacement vehicles to replace vehicles that are being retired from service (does not increase the size of the company fleet).

Plain language (plain text) . : Text or language which conveys an intelligible meaning in The language in which it is written with no hidden meaning; the intelligible text underlying encrypted text.

Plain language address (pla) . : See signal message address (sma).

Plain operation. : The use of a circuit/channel without on-line cipher equipment.

Plain text. : See plain language (plain text).

Plaindress. : A type of message in which the originator and addressee designations are

indicated externally of the text.

planck's constant: $(h) = 6.6262 \times 10^{-34} \text{ Js} = 4.1357 \times 10^{-15} \text{ eVs}$,

planck's constant : $(h/2\pi) = 1.05459 \times 10^{-34} \text{ Js}$

Plane Strain: A stress condition in linear elastic fracture mechanics (See LEFM) in which there is zero strain in a direction normal to both the axis of applied tensile stress and the direction of crack growth. Under plane strain conditions, the plane of fracture instability is normal to the axis of the principal tensile stress.

Planetary albedo: The fraction of incident solar radiation that is reflected by the Earth-atmosphere system and returned to space, mostly by back scatter from clouds in the atmosphere.

Planetary Gear Unit: Planetary gear units are a specialized gear unit used in power transmissions when a high power density and high transmission efficiency need to fit into a compact volume. The gear arrangement incorporates a central gear, the sun gear, with a collection of outer gears, the planets. The planet gears are often mounted to a rotating carrier plate and are surrounded by an annular gear.

Planetary Twister: A twisting machine whose payoff spools are mounted in rotating cradles that hold the axis of the spool in a fixed direction as the spools are revolved about one another so the wire will not kink as it is twisted.

Planimetric Method: A method of measuring grain size, in which the grains within a definite area are counted.

Planish Rolling: Process which involves light reduction in a single pass on a cold rolling mill.

Planishing: Producing a smooth surface finish on metal by rapid succession of blows delivered by highly polished dies or by a hammer designed for the purpose, or by rolling in a planishing mill.

Planned generator: A proposal by a company to install electric generating equipment at an existing or planned facility or site. The proposal is based on the owner having obtained either (1) all environmental and regulatory approvals, (2) a signed contract for the electric energy, or (3) financial closure for the facility.

planned generator : Proposal to install generating equipment at an existing or planned facility or site.

Planning authority (electric): The responsible entity that coordinates and integrates transmission facility and service plans, resource plans, and protection systems. NERC definition

Plant: A term commonly used either as a synonym for an industrial establishment or a generating facility or to refer to a particular process within an establishment.

Plant condensate: Liquid hydrocarbons recovered at inlet separators or scrubbers in natural gas processing plants at atmospheric pressure and ambient temperatures. Mostly pentanes and heavier hydrocarbons.

Plant Factor or Plant Capacity: The ratio of the average load to the rate capacity of the power plant.

Plant hours connected to load: The number of hours the plant is synchronized to load over a time interval usually of 1 year.

Plant liquids: Those volumes of natural gas liquids recovered in natural gas processing plants.

Plant Load: The amount of power the entire mill is using. It is the total of what we are generating plus what we are purchasing.

Plant or gas processing plant: A facility designated to achieve the recovery of natural gas liquids from the stream of natural gas, which may or may not have been processed through lease separators and field facilities, and to control the quality of the natural gas to be marketed.

Plant products: Natural gas liquids recovered from natural gas processing plants (and in some cases from field facilities), including ethane, propane, butane, butane-propane mixtures, natural gasoline, plant condensate, and lease condensate.

Plant use: The electric energy used in the operation of a plant. Included is the energy required for pumping at pump-storage plants.

Plant : A facility containing prime movers, electric generators, and other equipment for producing electric energy.

Plante Plate (Battery): Plate made of pure lead.

Plant-use electricity: The electric energy used in the operation of a plant. This energy total is subtracted from the gross energy production of the plant.

plasma: An ionized gas containing about equal numbers of positive and negative charges, which is a good conductor of electricity, and is affected by a magnetic field.

Plasma Refining: Process used to reduce sulfur and oxygen to very low levels.

Plaster Of Paris: A semi hydrated form of calcium sulfate made by sintering gypsum to 120 130 C (248 266F).

Plastic Adhesive: Plastic adhesives are used in the construction of building structures and smaller components to join one or more types of plastic together. The type of adhesive used depends on the material being joined. Most plastic adhesives chemically melt a thin layer of the plastics, causing the dried joint to be a strong, chemically-connected bond between the two surfaces. Acrylic cement, for the joining of PVC, ABS and other materials is a common plastic adhesive.

Plastic Deformation: Permanent deformation occurring in forming of metal which occurs after elastic limits have been exceeded.

Plastic Extruded Hanger: An extrusion is a component fabricated with a manufacturing process in which a material such as plastic or a soft metal is pulled through a die. The extrusion process results in long pieces of material with a constant cross-sectional shape. A plastic extruded hanger is a channel hanger, usually an U or J-channel cross-section shape made by extruding a plastic such as PVC. The hanger is then mounted to a wall or other surface for the purpose of hanging other objects.

Plastic Extrusion: A plastic extrusion is a component fabricated with a manufacturing process in which a material such as PVC, ABS or some other plastic is pulled through a die. The extrusion process results in long segments of plastic with a constant cross-section shape, with the shape set by the die pattern.

Plastic Molding: Plastic molding is a manufacturing process that uses thermoplastics to fabricate components. The thermoplastic is heated to the melt temperature, then injection molded into a form. The thermoplastic is then cooled sufficiently to return the thermoplastic to its solid state before removing it from the mold. Plastic molding is used for a wide range of applications and is widely used in the fabrication of automobile body panels.

Plasticizer: A chemical agent added in compounding plastics to make them softer and more flexible.

Plate: Carbon steel plates comprise that group of flat rolled finished steel products within the following size limitation: 0.180in or thicker, over 48in wide; 0.230in or thicker, over 6in wide; 7.53lb/sq ft or heavier, over 48in wide; 9.62lb/sq ft or heavier, over 6in wide.

Plate (Battery): The electrode of a cell consisting of a current collector and a positive or negative active material.

Plate Martensite: Martensite formed, partly in steels containing more than about 0.5% C and solely in steels containing more than about 1.0% C, as lenticular shape plates on irrational habit planes that are near or {259}A in very high carbon steels

Plate, Alclad: Composite plate comprised of an aluminum alloy core having on both surfaces (if on one side only, Alclad One Side Plate) a metallurgically bonded aluminum or aluminum alloy coating that is anodic to the core, thus electrolytically protectin the core against corrosion.

Plater: An operating unit which electrolytically applies zinc, chrome or tin to black plate.

Plater Distribution Tank: The tank that holds the plater solution.

Plater Roll: A steel roll used in the plater. The roll has electricity running through it.

Plates, Core Drying: Flat plates of metal on which cores are placed for baking.

Plating: A thin coating of metal laid on another metal.

Plating: The application of one metal over another.

Platinum: Chemical symbol Pt. The key material in the manufacture of automaotive catalysts

Platinum Group Metals: Called the "noble metals" because they are among the scariest of the metallic elements; more important, they are totally imperious to oxidation or corrosion. The family is six metals: Platinum, a white infusible metal with high electrical resistance; Palladium, also white, noted for its strength and high ductility; Iridium, a yellowish mineral with the most corrosion resistance of any metal known; Rhodium, a silver white metal also found with nickel; Ruthenium, a white metal noted for its hardness; and osmium, a bluish white metal that is so hard it is difficult to fabricate.

Plattcos: Double gated valves that allow particulate to drop out of the vacuum gas stream with minimal air loss.

Play : A set of known or postulated oil and gas accumulations sharing similar geologic, geographic, and temporal properties, such as source rock, migration pathway, timing, trapping mechanism, and hydrocarbon type. A play differs from an assessment unit; an assessment unit can include one or more plays. A play is often used to refer to a natural gas accumulation, i.e., a natural gas shale play.

PLC: Programmable Logic Controller. A specialized computer for implementing control sequences using software.

Plenum: Chamber or space forming a part of an air conditioning system

Plenum: A chamber which forms part of a building's air distribution system.

PLSJ: All-rubber, parallel-jacketed, two-conductor, light duty cord for pendant or portable use in damp locations.

PLT: Same as PLSJ except thermoplastic insulation.

Plug: A device utilizing blades which when inserted into a receptacle establishes connection between the conductors of the attached flexible cord and the conductors connected to the

receptacle.

Plug Fuse: A "household" type fuse with a threaded base such as an Edison-base or Type S tamperproof base. Rated 0-30 amperes, 125 volts.

Plug Setting Multiple: A term used in conjunction with electromechanical relays, denoting the ratio of the fault current setting of the relay.

plug : A device, provided with contact pins, which is intended to be attached to a flexible cable, and which can be engaged with a socket outlet or with a connector.

Plugged Die: Galvanize metal obstructions in the which block the air wipe and affect coating.

Plugged-back footage: Under certain conditions, drilling operations may be continued to a greater depth than that at which a potentially productive formation is found. If production is not established at the greater depth, the well may be completed in the shallower formation. Except in special situations, the length of the well bore from the deepest depth at which the well is completed to the maximum depth drilled is defined as "plugged-back footage."

Plugged-back footage is included in total footage drilled but is not reported separately.

Plutonium: A transuranic element, formed in a nuclear reactor by neutron capture. It has several isotopes, some of which are fissile and some of which undergo spontaneous fission, releasing neutrons. Weapons-grade plutonium is produced in special reactors to give >90% Pu-239, reactor-grade plutonium contains about 30% non-fissile isotopes. About one third of the energy in a light water reactor comes from the fission of Pu-239, and this is the main isotope of value recovered from reprocessing spent fuel.

Plutonium (Pu): A heavy, fissionable, radioactive, metallic element (atomic number 94) that occurs naturally in trace amounts. It can also result as a byproduct of the fission reaction in a uranium-fuel nuclear reactor and can be recovered for future use.

Pm, picometre (10-12m) . : A metric measure of length used for measuring atomic scale distances.

PMMA: Polymethymethacralate Foam used in the lost foam process, does release as much carbon as polystyrene.

pN junction: A junction between an N-type semiconductor and a p-type semiconductor made by some method of diffusing, fusing or melting.

PNA, PNW: Polyethylene-insulated control cables with nylon sheath on individual conductors. Cabled tape and polyvinyl chloride jacket. Dry or wet locations, 600V, 75°C

Pneumatic Conveyors: A conveyor is any mechanical device used to transfer material from one location to another. Unlike conventional belt conveyors, pneumatic conveyors use a piping system and high-pressure air to move lightweight particles or objects through the system. There are two types of pneumatic conveyors. Carrier systems used high-pressure air to move an object from one point to another. Dilute-phase systems use pressure to guide materials through a system.

Pneumatic device: A device moved or worked by air pressure.

Pneumatic Hoses: Pneumatic Hoses are used for directing air under pressure in a pneumatic system. Hose material is flexible, typically rubber or plastic. Pneumatic hose is rated for maximum and minimum (vacuum) pressure.

PNP (sourcing): A junction transistor having a p-type semiconductor as its emitter and collector and an n-type semiconductor as its base.

PO: Two stranded copper conductors with separator and code rubber insulation and cotton

braid over each. Laid parallel with cotton or rayon braid overall. For use in dry locations on small appliances. 300V-600V

Pocket Current Transformer: A round or toroidal core transformer mounted on bushings of power transformers, bulk oil circuit breaker, and other dead tank circuit breakers. These transformers are placed in pockets of these elements they are mounted on where the pocket length is measured

Pohland Method: A technique for the ultrasonic testing of steel in which a visible image of the defects present in the steel can be shown on a screen.

point (in wiring) : A termination of the fixed wiring intended for the connection of current using equipment.

Point of Common Communication: The interface between an inplant network containing embedded generation and the utility distribution network to which the inplant network is connected.

point of common coupling PCC: The location of the connection between the CEB network and the Embedded Generator, beyond which other customer loads may be connected on the CEB side. The PCC may be separate from the Point of Supply where a line is dedicated to the connection of an Embedded Generator.

point of common coupling : Power supplier-consumer metering point at which power is supplied to the electrical equipment of the consumer.

point of delivery : Point for interconnection on the Transmission Provider's System where capacity and/or energy are made available to the end user.

point of supply POS: - The location of the connection between the CEB network and the Embedded Generator.

Point-contact cell: A high efficiency silicon concentrator cell that employs light trapping techniques and point-diffused contacts on the rear surface for current collection.

Point-to-point connection. : See link.

Point-to-point. : A circuit that connects terminals at two (and only two) points.

polar co-ordinates: The (r,q) co-ordinates of a point in the plane.

Polar Ingredient: Any ingredient in a material or complex capable of ionization.

Polar transmission. : See bipolar transmission.

polarisation: Change in the potential of an electrode as the result of flow.

Polarity: In electricity, the quality of having two charged poles, one positive and one negative.

Polarity: 1) The electrical Term used to denote the voltage relationship to a reference potential (+). 2) With regard to Transformers, Polarity is the indication of the direction of the current flow through the high voltage terminals with respect to the direction of current flow through the low voltage terminals.

polarity: Magnetically, opposite poles, north and south. In electricity, oppositely charged poles, positive and negative.

Polarity : For electrical charge, the indication of a charge as either positive (+) or negative (-). Voltage at a point would be indicated as being either positive or negative with respect to some other point. For magnetic poles, the indication as either north or south.

Polarization: A means of assuring the mating of plugs and receptacles of the same rating in only the correct position.

polarization diversity. : The use or availability of various polarizations such as horizontal, vertical, cross, circular or elliptical either simultaneously or singly.

Polarization. : The direction of the electrical field component of radiated energy.

Polarized: Visible light from the emitter of a retroreflective photoelectric sensor that is filtered so as to be projected in only one plane. The receiver of a polarized unit is filtered to accept only light that is reflected perpendicular to the emitted light. Corner cube reflectors are required to properly rotate the emitted light source.

Polarized wave, left-hand (anti-clockwise). : An elliptically or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, when looking in the direction of the propagation, rotates with time in a left-hand or anti-clockwise direction.

Polarized wave, right-hand (clockwise). : An elliptically or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in the right-hand or clockwise direction.

Pole: The term "Pole" as used in designating plugs and receptacles refers to a terminal to which a circuit conductor (always current carrying) is connected. In switches, the number of poles indicates the number of conductors being controlled.

Pole Breaker: A pole breaker, also called a circuit breaker, is an electrical component designed to automatically trip, or open, a circuit when the circuit reaches an overload or a fault condition. Circuit breakers can be reset, either manually or automatically based on the design of the breaker. Circuit breakers are characterized by the number of breaker poles it has, with one breaker pole dedicated to each live conductor.

Pole Spacing (Lighting): $(ILL \times CU \times LLF)/(AMF \times RW)$

Pole/Tower type: The type of transmission line supporting structure.

Pole-mile: A unit of measuring the simple length of an electric transmission/distribution line/feeder carrying electric conductors, without regard to the number of conductors carried.

Policy mapping. : Recognising that, when a ca in one domain certifies a ca in another domain, a particular certificate policy in the second domain may be considered by the authority of the first domain to be equivalent (but not necessarily identical in all respects) to a particular certificate policy in the first domain.

Polished Surface: The finish obtained by buffing with rouge or similar fine abrasive, resulting in a high gloss or polish.

Polishing: Producing a specularly reflecting surface.

Polishing Filter: oil from the hydraulic system tank through the filters and then back to the tank.

Polychloroprene: Chemical name for Neoprene. A rubber-like compound used for jacketing where wire and cable will be subject to rough usage, moisture, oil, greases, solvents and chemicals. May also be used as low insulating material.

Polycrystalline: Comprising an aggregate of more than one crystal, and usually a large number of crystals.

Polycrystalline: See "Multi Crystalline".

Polycrystalline: See 'Multicrystalline.'

Polyethylene: A thermoplastic material composed of ethylene polymers. Polyethylene has

excellent electrical and mechanical properties and is used as an insulating material in cable.

Polyethylene: A family of insulating materials derived from polymerization of ethylene gas. They are basically pure hydrocarbon resins, with excellent dielectric properties.

polygon of forces: If the forces acting on an object can be represented by the sides of a polygon taken in order, the forces will be in equilibrium.

Polymer: A material having molecules of high molecular weight formed by polymerization of lower molecular weight molecules.

Polymer Concrete: Also referred to as Reinforced Polymer Mortar (RPM). Polymer Concrete material consists of calcareous and siliceous stone, glass fibers and thermoset polyester resin. Polymer concrete can be used in the manufacture of equipment pads, grade level boxes and

Polyphase: A polyphase system is a means of distributing alternating current electrical power. Polyphase systems have two or more energized electrical conductors carrying alternating currents with a definite time offset between the peak amplitudes of the wave in each

polyphase: A general term applied to any system of more than a single phase. This term is ordinarily applied to symmetrical systems.

Polyphase: A general term applied to any system of more than a single phase. This term is ordinarily applied to symmetrical systems.

Polyphase system: it is related to the distribution of alternating current electrical power. This system has three or more alternating currents energized electrical conductors.

Polystyrene: A polymer of styrene used in making molding products. In particular, used in the lost foam process.

Polystyrene: A polymer of styrene that is a rigid, transparent thermoplastic with good physical and electrical insulating properties, used in molded products, foams, and sheet materials.

polythene: Tough thermoplastic material, made by the polymerisation of ethylene. It is flexible, transparent, chemically resistant and a good electrical insulator.

Polyvinyl Chloride: Polyvinyl Chloride. PVC, a thermoplastic compound, is a commonly used Wire and Cable insulation and jacketing material.

Polyvinyl chloride (PVC): A polymer of vinyl chloride. Tasteless, odorless, insoluble in most organic solvents. A member of the family vinyl resin, used in soft flexible films for food packaging and in molded rigid products, such as pipes, fibers, upholstery, and bristles.

polyvinyl chloride PVC: A white thermoplastic material, produced by the polymerisation of vinylidene chloride.

Pondage: The amount of water stored behind a hydroelectric dam of relatively small storage capacity; the dam is usually used for daily or weekly control of the flow of the river.

Pool: In general, a reservoir. In certain situations, a pool may consist of more than one reservoir.

Pool site: One or more spent fuel storage pools that has a single cask loading area. Each dry cask storage area is considered a separate site.

Poor Oiling: Not enough oil on the strip per customer specification.

Poor Slitting: The quality of the slit edge due to bad shape, dull knives, etc.

Pop Solvent: Blister and/or void in the coating resulting from trapped solvents released during curing process

Poppet: That part of certain valves which blocks flow when it closes against a seat.

Population-weighted Degree Days: Heating or cooling degree days weighted by the population of the area in which the degree days are recorded. To compute national population-weighted degree days, the Nation is divided into nine Census regions comprised of from three to eight states that are assigned weights based on the ratio of the population of the region to the total population of the Nation. Degree day readings for each region are multiplied by the corresponding population weight for each region, and these products are then summed to arrive at the national population weighted degree day figure.

porcelain: Hard, white material made by the firing of a mixture of pure kaolin (china clay) with felspar and quartz, or with other materials containing silica.

Pore space: The open spaces or voids of a rock taken collectively. It is a measure of the amount of liquid or gas that may be absorbed or yielded by a particular formation.

Port: A communications connection on a computer-based device.

Port: This allows a computer external to a secured network, access a computer on the network through the mapping of a port on the network's firewall to a port on a specified computer.

port: A pair of terminals through which a single current may enter or leave a network.

Port concentrator, port concentration. : A device that allows several terminals to share a single computer port; a concentrator link in which the port concentrator simplifies the software demultiplexing used in lieu of the demultiplexing normally performed by the computer-site concentrator.

Port Forwarding: In networking, a server's various functions, such as managing FTP traffic or maintaining the DNS list, are each assigned a virtual address called a port. Any requests for that function are sent to the port address.

Port selector. : See data pabx.

Port. : A computer interface capable of attaching to a modem for communicating with a remote terminal.

Portable electric heater: A heater that uses electricity and that can be picked up and moved.

portable equipment: Electrical equipment which is moved while in operation or which can easily be moved from one place to another while connected to the supply.

Portable fan: Box fans, oscillating fans, table or floor fans, or other fans that can be moved.

Portable kerosene heater: A heater that uses kerosene and that can be picked up and moved.

Position line determination. : See radio position line determination.

Positive: For sources, implies the terminal that has a deficiency of free electrons. Also, can imply the polarity of a point in a circuit in respect to some other point.

Positive control. : In air traffic control within nato, a method of regulation of all identified air traffic within a designated air space, conducted with electronic means by an air traffic control agency having the authority and responsibility therein.

Positive Displacement: A characteristic of a pump or motor when a constant volume is delivered for each revolution or stroke.

positive feedback: Feedback where the returning signal aids the effect of the input signal.

positive sequence: A balanced set of three phase components which have the same magnitude, same sequence as the original unbalanced set, and phase angle differing from each other by 120°. The frequency is of course the same as the original unbalanced three

phase system.

POSJ: All-rubber, parallel, light duty rip-cord for use on lamps and small appliances. 300V, 60°C

POSJX: All-rubber, parallel, #20 A.W.G. rip-cord for use on lamps, clocks and Christmas trees. 125V

Post Paint: To paint a manufactured part after it has been formed.

Postheating: A process used immediately after welding whereby heat is applied to the weld zone either for tempering or for providing a controlled rate of cooling, in order to avoid a hard or brittle structure.

Post-mining emissions: Emissions of methane from coal occurring after the coal has been mined, during transport or pulverization.

Postriggering: The acquisition of a programmed number of samples by a data acquisition board after trigger conditions are met.

Pot: A vessel for holding molten metal. Also used to refer to the electrolytic reduction cell employed in winning certain metals, such as aluminum, from a fused electrolyte.

Pot: 1) Slang for an overhead transformer. 2) Short for "Potential".

POT: Thermoplastic, parallel, light duty rip-cord. 300V, 60°C to 105°C

Pot Annealing: Is the same as box annealing.

Pot Quenching: Quenching carburised parts directly from the carburising pot or box.

Potable Water: Treated water used for human consumption.

Potential: A transformer used to lower the voltage at a set ratio so that the voltage can be measured by instruments and meters at a safe representative level.

Potential consumption: The total amount of consumption that would have occurred had the intensity of consumption remained the same over a period of time.

potential difference: potential difference is the work done in moving a unit positive electric charge from one point to another. [Unit volt or V]

potential divider: A combination of impedances which allows a fraction of the input voltage to be taken as output.

potential energy: Energy which a body possesses by virtue of its position. The potential energy of water in a reservoir is usually measured with respect to sea level.

potential equalization conductor : Conductor providing a connection between equipment and the potential equalization busbar of the electrical installation.

Potential peak reduction: The potential annual peak load reduction (measured in kilowatts) that can be deployed from Direct Load Control, Interruptible Load, Other Load Management, and Other DSM Program activities. (Please note that Energy Efficiency and Load Building are not included in Potential Peak Reduction.) It represents the load that can be reduced either by the direct control of the utility system operator or by the consumer in response to a utility request to curtail load. It reflects the installed load reduction capability, as opposed to the Actual Peak Reduction achieved by participants, during the time of annual system peak load.

Potential Transformer: The voltage in a circuit. Reference is usually to the AC Voltage.

potential transformer: An instrument transformer specifically designed to give an accurate voltage ratio for measurement and/or control purposes. They are always connected in parallel with the circuit (like a voltmeter).

Potential Transformer: A transformer designed for shunt or parallel connection in its

primary circuit, with the ratio of transformation appearing as a ratio of potential differences.

Potential Transformers: Potential transformers are required to provide accurate voltages for meters used for billing industrial customers or utility companies.

Potentiometer: A three-terminal resistor with an adjustable center connection generally used to control voltage; widely used for volume control in radio and television receivers. In this sense, also called a Pot.

potentiometer: A three terminal device with a wiper that is positioned along a resistive element, making it a voltage divider.

potentiometer: It is essentially a piece of apparatus by means of which emfs are compared using null deflection.

Potentiometer: (POT) A variable resistor, when used in a phase control it adjusts the light intensity.

Pothead: Slang for a device used to transition an overhead conductor to underground.

Pothead are normally porcelain and have been largely replaced with nonceramic, synthetic rubber, terminators of the type manufactured by Thomas & Betts Elastimold.

Pothead: A type of insulator with a bell or pot-like shape used to connect underground electrical cables to overhead lines. It serves to separate the bunched-up conductors from one another in the cable to the much wider separation in the overhead line. It also seals the cable end from the weather.

Pots, plain old telephone service. : A reference to the basic service provided by the public telephone network without any added facilities such as conditioning.

Potting: The sealing of a cable termination or other component with a liquid, which thermosets into an elastomer or solid compound to exclude moisture.

pound lb: The imperial unit of weight. $1 \text{ lb} = 0.453,592 \text{ kg}$

poundal: The imperial unit of force. It is that force which acting on a mass of 1 lb will impart to it an acceleration of 1 ft/s^2 .

Pounds (district heat): A weight quantity of steam, also used to denote a quantity of energy in the form of steam. The amount of usable energy obtained from a pound of steam depends on its temperature and pressure at the point of consumption and on the drop in pressure after consumption.

Pouring: Transfer of molten metal from furnace to ladle, ladle to ladle, or ladle into molds.

Pouring Cup: The flared section of the top of the downsprue. It can be shaped by hand in the cope, or be a shaped part of the pattern used to form the downsprue; or may be baked core cup placed on the top of the cope over the downsprue.

POW: PointonWave. Pointonwave switching is the process to control moment of switching to minimize the effects (inrush currents, overvoltages).

Powder Cutting: Introducing iron powder in an oxygen stream to hasten oxygen torch cutting by the combination of fluxing and oxidation. Generally used for cutting stainless steel.

Powder Metals: Fabrication technology in which fine metallic powder is compacted under high pressure and then heated at a temperature slightly below the melting point to solidify the material. Primary users of powder metal parts are auto, electronics and aerospace industries.

Powder River Basin: Consists of the Montana counties of Big Horn, Custer, Powder River, Rosebud, and Treasure and the Wyoming counties of Campbell, Converse, Crook, Johnson, Natrona, Niobrara, Sheridan, and Weston.

Powdered Coal Mill: (Pulverizer) Electrically or steam driven device that crushes coal to a fine powder form and exhausts it into the boiler as fuel.

Powdering: A problem encountered in the field where the iron zinc coating (from Galvanneal products) comes off the base metal and collects in the die.

Power: The ratio of true power to the apparent power in a circuit, especially those that are not purely resistive. It is also equal to the cosine of the phase angle for the circuit.

Power: The rate of producing, transferring, or using energy, most commonly associated with electricity. Power is measured in watts and often expressed in kilowatts (kW) or megawatts (mW). Also known as "real" or "active" power. See Active Power, Apparent Power, Reactive Power, Real Power

Power: An electronic device (e.g. thyristor or IGBT) or assembly of such devices (e.g. inverter). Typically used in a power transmission system to provide smooth control of output of an item of plant.

power: Is the time rate of consuming or absorbing energy. [Unit watt or W]

power: The active component of power in an alternating circuit is usually referred to as power or active power. [Unit watt or W]

Power: Rate or work, equals work divided by time.

Power (electrical): An electric measurement unit of power called a voltampere is equal to the product of 1 volt and 1 ampere. This is equivalent to 1 watt for a direct current system, and a unit of apparent power is separated into real and reactive power. Real power is the work-producing part of apparent power that measures the rate of supply of energy and is denoted as kilowatts (kW). Reactive power is the portion of apparent power that does no work and is referred to as kilovars; this type of power must be supplied to most types of magnetic equipment, such as motors, and is supplied by generator or by electrostatic equipment. Voltamperes are usually divided by 1,000 and called kilovoltamperes (kVA). Energy is denoted by the product of real power and the length of time utilized; this product is expressed as kilowatthours.

Power (of radio transmitter). : When not otherwise specified the definition of peak power of a radio transmitter shall be used.

Power ascension: The period of time between a plant's initial fuel loading date and its date of first commercial operation (including the low-power testing period). Plants in the first operating cycle (the time from initial fuel loading to the first refueling), which lasts approximately 2 years, operate at an average capacity factor of about 40 percent.

power balancing. : The adjustment of individual transmitter eirp levels to achieve optimum reception at all addressee earth and distant stations. Controlled by amps.

Power Cable: A cable of various sizes, various construction and insulation. Used to supply power to a variety of types of equipment.

Power conditioning equipment: Electrical equipment, or power electronics, used to convert power from a photovoltaic array into a form suitable for subsequent use. A collective term for inverter, converter, battery charge regulator, and blocking diode.

power conditioning systems: A broad class of equipment that includes filters, isolation transformers, and voltage regulators. Generally, these types of equipment offer no protection against power outages.

Power Consumption: Maximum amount of power required to properly operate the device.

Power density: The ratio of the power available from a battery to its mass (W/kg) or volume (W/l).

power dissipation: The amount of power that is consumed and converted to heat.

power distribution unit: A portable electrical distribution unit that provides an easily expandable and flexible electrical environment for an equipment and its associated peripherals.

Power Driven Hammer: A forging hammer with steam or air cylinder for raising the ram and augmenting its downward blow.

Power Electronics Device: See California Power Exchange.

Power exchange: An entity providing a competitive spot market for electric power through day- and/or hour-ahead auction of generation and demand bids.

Power Exchange: The ratio of energy consumed (watts) versus the product of input voltage (volts) times input current (amps). In other words, power factor is the percentage of energy used compared to the energy flowing through the wires. Adding capacitors to the system

Power exchange generation: Generation scheduled by the power exchange. See definition for power exchange.

Power exchange load: Load that has been scheduled by the power exchange and is received through the use of transmission or distribution facilities owned by participating transmission owners.

power exchange : This is a commercial entity responsible for facilitating the development of transparent spot prices for energy capacity, and/or ancillary services.

Power factor: The ratio of real power (kilowatt) to apparent power kilovolt-ampere for any given load and time.

Power Factor: A mean of transmitting information over a power transmission line by using a carrier frequency superimposed on the normal power frequency.

Power factor: The ratio of the average power and the apparent volt-amperes.

Power Factor: It may be defined as the cosine of angle of lead or lag. Or the ration of resistance to impedance. The ratio of true power to the apparent power.

Power Factor: The ratio of the power to the effective values of the electromotive force multiplied by the effective value of current in volts and amperes respectively. The cosine of the angle between voltage applied and the current resulting.

Power Factor: Per cent power factor is a measure of a particular motor's requirements for magnetizing amperage.

Power Factor (Pf) : 1) Inductor flow in the pot. A high number may indicate an obstruction in circulation. 2) Term that describes the relationship between real power (KW) and apparent power (KVA) in a circuit. It is the cosine of the angle between KW and KVA on a phasor drawing of a circuit. (In a phasor drawing, this angle is the same angle formed by the voltage and current relationship.) It is almost always better to run the generators with a lagging power factor (meter pointing to left of zero).

power factor correction: process of increasing the power factor to near unity without altering the original load.

power factor correction capacitor : This is a device that helps improve the efficiency of the flow of electricity through distribution lines by reducing energy losses. It is installed in substations and on poles. Usually it is installed to correct an unwanted condition in an

electrical system.

power factor PF: Ratio of the active power consumed by a component or circuit to the apparent power. For purely sinusoidal waveforms, this is also equal to the cosine of the phase angle between the voltage and the current.

Power factor(PF): Generally, a device or circuit used to convert alternating current (ac) of specific voltage to one or more direct current (dc) values of specific voltage and current ratings. May have variable voltage ability in some instances. May also refer to a device that converts a specific dc value to another dc value (dc to dc converter).

Power Generation Plants : A facility designed to produce electric energy from another form of energy, such as fossil fuel, nuclear, hydroelectric, geothermal, solar thermal, and wind.

power grid (National Grid): A network of power lines and associated equipment used to transmit and distribute electricity over a geographic area (or country).

Power in an Alternating-Current Circuit: The product of the voltage, current and the cosine of the phase difference between them. Expressed in watts.

Power Line Carrier: A device for producing radio-frequency power for transmission on power lines.

Power Line Carrier Communication: An entity that takes title to electric power and then resells the power to enduse customers. This "middleman," which acts for itself in negotiating contracts, purchases, or sales of electrical energy, is required to meet two FERC tests to be certified as

Power loss: The difference between electricity input and output as a result of an energy transfer between two points.

Power Marketer: A large transformer, generally larger than 1,000 kVA in capacity.

Power marketers: Business entities engaged in buying and selling electricity. Power marketers do not usually own generating or transmission facilities. Power marketers, as opposed to brokers, take ownership of the electricity and are involved in interstate trade. These entities file with the Federal Energy Regulatory Commission (FERC) for status as a power marketer.

power marketers : Entities engaged in buying and selling electricity.

power plant : A generating station where electricity is produced.

Power pool: An association of two or more interconnected electric systems having an agreement to coordinate operations and planning for improved reliability and efficiencies.

power pool: An association of two or more interconnected electric systems having an agreement to coordinate operations and planning for improved reliability and efficiencies.

Power production plant: All the land and land rights, structures and improvements, boiler or reactor vessel equipment, engines and engine-driven generator, turbo generator units, accessory electric equipment, and miscellaneous power plant equipment are grouped together for each individual facility.

power purchase agreement PPA: An agreement between the CEB and the Generating Company for the purchase of electricity by the CEB.

power purchase agreement : A contract entered into by an independent power producer and an electric utility. The power purchase agreement specifies the terms and conditions under which electric power will be generated and purchased. Power purchase agreements generally

include specification of the size and operating parameters of the generation facility; contract terms; price mechanisms; service and performance obligations; dispatchability options; and conditions of termination or default.

Power supply: A separate unit or part of a circuit that provides power to the rest of a circuit.

Power supply: The rate at which energy is consumed. In electronics it refers to the consumption of electrical energy in joules over time; measured in watts.

power supply : The part of a circuit that supplies power to the entire circuit or part of the circuit. Usually a separate unit that supplies power to a specific part of the circuit in a system.

Power transfer limit: The maximum power that can be transferred from one electric utility system to another without overloading any facility in either system.

Power Transformer: Rate at which energy is released or consumed, expressed in watts.

Power Transformers: Transformers raise or lower the voltage as needed to serve the transmission or distribution circuits.

Power, carrier. : Of a radio transmitter, the average power supplied to the aerial transmission line or specified artificial load by a transmitter during one radio frequency cycle under conditions of no modulation. For each class of emission the condition of no modulation should be specified.

Power, effective monopole radiated (emrp) (in a given direction). : The product of the power supplied to the antenna and its gain relative to a short vertical antenna in a given direction.

Power, effective radiated (erp) (in a given direction). : The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

Power, equivalent isotropically radiated (eirp). : The product of the power supplied to the antenna and the antenna gain and given direction to an isotropic antenna (absolute or isotropic gain).

Power, mean (of a radio transmitter). : The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

Power, peak envelope (of a radio transmitter). : The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.

Powerhouse: A structure at a hydroelectric plant site that contains the turbine and generator.

Powersum: A test method for four-pair cable which compares the sum of the pair-to-pair crosstalk from three pairs to the fourth pair.

POWQERFLEX 90® POWER CABLE: A premium 600/200 volt portable power cable.

POXT: Same as POT, but #20 A.W.G. for clock and Christmas tree use. 125V

PPE, additions to: The current year's expenditures on property, plant, and equipment (PPE). The amount is predicated upon each reporting company's accounting practice. That is, accounting practices with regard to capitalization of certain items may differ across companies, and therefore this figure in FRS (Financial Reporting System) will be a function of each reporting company's policy.

P-persistent. : (in lan technology) a term used to describe a csma lan in which the stations involved in a collision try to retransmit almost immediately - with a probability p. Compare with non-persistent and persistent. Also see one (1) persistent.

PPI: Producer Price Index

PPP: PointtoPoint Protocol. PPP is the internet standard for serial communications. PPP defines how modem connection exchanges data packets with other systems on the internet.

PPTP: PointtoPoint Tunneling Protocol. PPTP is a protocol that allows secure transmission of data in TCP/IP packets. PPTP protocols are used to carry secure communications over Virtual Private Networks that use public phone lines.

Pre Paint: To paint a product in coil form and then manufacture it into a final part.

preamble. : One of the components contained in the heading of a message whose elements include the degree of precedence, the date-time group and message instructions. Precedence designations. Precedence designations and definitions are as follows:

Precedence, dual. : Message containing two precedence designations, the higher one for all action addressees and the lower one for all information addressees.

Precedence. : A destination assigned to a message by the originator to indicate to communication personnel the relative order of handling and to the addressee the order in which the message is to be noted.

Precharge Pressure: The pressure of compressed gas in an accumulator prior to the admission of liquid.

Precious Metals: Relatively scarce, highly corrosion resistant, valuable metals found in periods 5 and 6 (groups VIII and Ib) of the periodic table. They include ruthenium, rhodium, palladium, silver, osmium, iridium, platinum and gold.

Precipitation Hardening: (PH) A small group of stainless steels with high chromium and nickel content, with the most common types having characteristics close to those of martensitic (plain chromium stainless class with exceptional strength) steels. Heat treatment provides this class with its very high strength and hardness. Applications for PH stainless steels include shafts for pumps and valves as well as aircraft parts.

Precipitation Heat Treatment: Any of the various aging treatments conducted at elevated temperatures to improve certain mechanical properties through precipitation from solid solution.

precision: Degree of agreement within a group of measurements or instruments.

Precision Forging: A forging produced to closer tolerances than normally considered standard by the industry.

Precision Rotary Tube Laser Cutting: Precision Rotary Tube Laser Cutting uses a laser to make precision cuts in thin walled tubing. 4th and 5th axis CNC controlled rotary tube laser cutting machines and produce a variety of complex shapes including miters, slots, holes, and windows.

Precision Thermometers: Precision Thermometers is a device for measuring temperature. While common thermometers use fluid expansion to determine temperature, precision instruments often use RTD sensors or other electronics for a precise measurement.

Prediscovery costs: All costs incurred in an extractive industry operation prior to the actual discovery of minerals in commercially recoverable quantities; normally includes prospecting, acquisition, and exploration costs and may include some development costs.

Preferred Orientation: A condition of a polycrystalline aggregate in which the crystal orientations are not random.

Prefilter: A filter system containing 16 filter elements that clean the hydraulic oil as it passes

from one storage tank to another.

Prefix. : One of the components contained in the heading of a message whose elements may include the accounting information, group count and svc.

Preform: The forging operation in which stock is preformed or shaped to a predetermined size and contour prior to subsequent die forging operations; the operation may involve drawing, bending, flattening, edging, fullering, rolling or upsetting. The preform operation is not considered to be scheduled operation unless a separate heat is required; usually, when a preform operation is required, it will precede a forging operation and will be performed in conjunction with the forging operation and in the same heat. In ring rolling, a term generally applied to ring blanks of a specific shape to be used for profile (contour) ring rolling.

Pregnant solution: A solution containing dissolved extractable mineral that was leached from the ore; uranium leach solution pumped up from the underground ore zone through a production hole.

Preheating: A high temperature soaking treatment used to change the metallurgical structure in preparation for a subsequent operation, usually applied to the ingot.

Preliminary permit (hydroelectric power): A single site permit granted by the FERC (Federal Energy Regulatory Commission), which gives the recipient priority over anyone else to apply for a hydroelectric license. The preliminary permit enables the recipient to prepare a license application and conduct various studies for economic feasibility and environmental impacts. The period for a preliminary permit may extend to 3 years.

Premises network. : Same as cable system.

Premises Wiring: The technology of wiring buildings and equipment for data, telephone, video and other electrical/electronic functions.

Premises Wiring System: The complete wiring system, on a user premises, used for the transmission of voice, data, and video.

Premium: Cost of an option and/or an amount added to a base price for a material, i.e. added cost beyond the base Comex, LME and/or producer and manufacturer prices.

Premium gasoline: Gasoline having an antiknock index (R+M/2) greater than 90. Includes both leaded premium gasoline as well as unleaded premium gasoline.

Premium gasoline: Gasoline having an antiknock index, i.e., octane rating, greater than 90. Note Octane requirements may vary by altitudes or fluids at various depths beneath the surface of the earth. The energy is extracted by drilling and/or pumping.

Premodulation. : Premodulation is the combination of multiplex channel signals prior to the modulation of the carrier.

Preparation plant: A mining facility at which coal is crushed, screened, and mechanically cleaned.

Prepierce: In ring rolling, a vertically mounted piercing (punching) tool used for preparation of ring blanks on the ring blank press. A tapered tool of various diameters and lengths.

Preproduction costs: Costs of prospecting for, acquiring, exploring, and developing mineral reserves incurred prior to the point when production of commercially recoverable quantities of minerals commences.

present value : The amount of money required to secure a specified cash flow on a future date at a given rate of return.

present worth factor : The adjustment factor that discounts a sum of future dollars back to

the current year.

Presentation layer. : The sixth layer in the OSI model; responsible for format and code conversion.

Preset: The ability of a dimmer or fan speed control to remember a desired level of output.

Press Forging: The shaping of metal between dies by mechanical or hydraulic pressure. Usually this is accomplished with a single work stroke of the press for each die station

Press Forming: See Brake Press Bending.

pressure: The force per unit area acting on a surface.

Pressure Chamber: (Cylinder) Part of the particle counter sampler where the oil sample is placed to be drawn for testing.

Pressure Compensator: A hydro mechanical device fitted to a pump or other flow producing/controlling device that reduces flow when pressure rises and increases flow as pressure decreases, to preset limits.

Pressure Die Casting: A British term. See Die Casting

Pressure Differential: The difference in pressure between any two points in a system or a component.

Pressure Differential Switch: A digital device that opens or closes a switch when the internal pressure differential changes state. Most commonly used to sense clogging of filter elements.

Pressure Drop : See Pressure, Differential.

Pressure Gauge : A visual indicator of pressure that is set for 'zero' psi at atmospheric pressure and includes a dial which will continue to indicate the level of pressure above atmospheric pressure. See VACUUM GAUGE and COMPOUND GAUGE.

Pressure Line: A passage that carries fluid from the source of flow to various operating elements of a fluid power system. Rated for operating pressure at the maximum expected pressure of the system.

Pressure Mottling: See ?Mottling, Pressure?

Pressure Override: The measure of pressure increase over the nominal setting of a device when additional fluid flow is passed over the device after it initially opens.

Pressure Range: The minimum and maximum pressure limits over which a specified transducer is designed to operate.

Pressure Tight: A term describing a casting free from porosity of the type that would permit leaking.

Pressure Transducer: An analog device that produces a change in voltage or current when the internal pressure changes state. Normally a fast response device for use in servo control systems.

Pressure Transmitter: An analog device that produces a change in voltage or current when the internal pressure changes state. Normally a slow acting device for use in display systems where update time is not crucial.

Pressurized water reactor (PWR): The most common type of light water reactor (LWR), it uses water at very high pressure in a primary circuit and steam is formed in a secondary circuit.

Pressurized-water reactor (PWR): A nuclear reactor in which heat is transferred from the core to a heat exchanger via water kept under high pressure, so that high temperatures can be maintained in the primary system without boiling the water. Steam is generated in a secondary

circuit.

Pretreated: Steel to which a chemical treatment has been applied to prepare it for future surface treatments such as painting. (See Bonderized, Light Special Treatment, Special Treatment, Weirbrite Clear).

Pretriggering: A data acquisition board that maintains a continuous buffer of data, so that when trigger conditions are met, data generated before the condition occurred can be acquired.

Preventive maintenance program for heating and/or cooling equipment: A HVAC conservation feature consisting of a program of routine inspection and service for the heating and/or cooling equipment. The inspection is performed on a regular basis, even if there are no apparent problems.

Price: The amount of money or consideration-in-kind for which a service is bought, sold, or offered for sale.

price cap : Situation where a price has been determined and fixed.

primary: That winding of a transformer which is connected to and receives energy from an external source of electrons.

Primary: The windings of a transformer which receiver every from the supply circuit.

Primary cell: A device that uses up its ingredients to convert chemical energy to electrical energy and therefore can not be recharged.

Primary Choke : That part of the gating system which most restricts or regulates the flow of metal into the mold cavity.

primary circuit : Distribution circuit (less than 69,000 volts) on the high voltage side of the transformer.

Primary Circuits: These are the distribution circuits that carry power from substations to local load areas. They are also called express feeders or distribution main feeders. The distribution feeder bay routes power from the substation to the distribution primary feeder circuits.

Primary coal: All coal milled and, when necessary, washed and sorted.

Primary energy: Energy in the form that it is first accounted for in a statistical energy balance, before any transformation to secondary or tertiary forms of energy. For example, coal can be converted to synthetic gas, which can be converted to electricity; in this example, coal is primary energy, synthetic gas is secondary energy, and electricity is tertiary energy. See Primary energy production and Primary energy consumption.

Primary energy consumption: Consumption of primary energy. (Energy sources that are produced from other energy sources, e.g., coal coke from coal, are included in primary energy consumption only if their energy content has not already been included as part of the original energy source. Thus, U.S. primary energy consumption does include net imports of coal coke, but not the coal coke produced from domestic coal.) The U.S. Energy Information Administration includes the following in U.S. primary energy consumption coal consumption; coal coke net imports; petroleum consumption (petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel); dry natural gas excluding supplemental gaseous fuels consumption; nuclear electricity net generation (converted to Btu using the nuclear plants heat rates); conventional hydroelectricity net generation (converted to Btu using the fossil-fuels plant heat rates); geothermal electricity net generation (converted to

Btu using the fossil-fuels plant heat rates), and geothermal heat pump energy and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fuels plant heat rates), and solar thermal direct use energy; wind electricity net generation (converted to Btu using the fossil-fuels plant heat rates); wood and wood-derived fuels consumption; biomass waste consumption; fuel ethanol and biodiesel consumption; losses and co-products from the production of fuel ethanol and biodiesel; and electricity net imports (converted to Btu using the electricity heat content of 3,412 Btu per kilowatthour).

Primary energy consumption expenditures: Expenditures for energy consumed in each of the four major end-use sectors, excluding energy in the form of electricity, plus expenditures by the electric utilities sector for energy used to generate electricity. There are no fuel-associated expenditures for associated expenditures for hydroelectric power, geothermal energy, photovoltaic and solar energy, or wind energy. Also excluded are the quantifiable consumption expenditures that are an integral part of process fuel consumption.

Primary energy production: Production of primary energy. The U.S. Energy Information Administration includes the following in U.S. primary energy production coal production, waste coal supplied, and coal refuse recovery; crude oil and lease condensate production; natural gas plant liquids production; dry natural gas excluding supplemental gaseous fuels production; nuclear electricity net generation (converted to Btu using the nuclear plant heat rates); conventional hydroelectricity net generation (converted to Btu using the fossil-fuels plant heat rates); geothermal electricity net generation (converted to Btu using the fossil-fuels plant heat rates), and geothermal heat pump energy and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fuels plant heat rates), and solar thermal direct use energy; wind electricity net generation (converted to Btu using the fossil-fuels plant heat rates); wood and wood-derived fuels consumption; biomass waste consumption; and biofuels feedstock.

Primary fuels: Fuels that can be used continuously. They can sustain the boiler sufficiently for the production of electricity.

Primary Insulation: The layer of material which is designed to do the electrical insulating, usually the first layer of material applied over the conductor.

Primary Metal: Metal extracted from minerals and free of reclaimed metal scrap. Compare with native metal.

Primary metropolitan statistical area (PMSA): A component area of a Consolidated metropolitan statistical area consisting of a large urbanized county or cluster of counties (cities and towns in New England) that demonstrate strong internal economic and social links in addition to close ties with the central core of the larger area. To qualify, an area must meet specified statistical criteria that demonstrate these links and have the support of local opinion.

Primary recovery: The crude oil or natural gas recovered by any method that may be employed to produce them where the fluid enters the well bore by the action of natural reservoir pressure(energy or gravity).

Primary transportation: Conveyance of large shipments of petroleum raw materials and refined products usually by pipeline, barge, or ocean-going vessel. All crude oil transportation is primary, including the small amounts moved by truck. All refined product transportation by pipeline, barge, or ocean-going vessel is primary transportation.

Primary winding: The input winding to a transformer.

Prime: Coil type indicating that the produced coil or lift meets all the requirements of the order.

Prime Coil Any: quality reasons.

Prime contractor. : See control ptt (or prime contractor).

Prime mover: The engine, turbine, water wheel, or similar machine that drives an electric generator; or, for reporting purposes, a device that converts energy to electricity directly (e.g., photovoltaic solar and fuel cells).

prime mover: The engine, turbine, water wheel, or similar machine that drives an electric generator; or, for reporting purposes, a device that converts energy to electricity directly (e.g., photovoltaic solar and fuel cells).

Prime supplier: A firm that produces, imports, or transports selected petroleum products across State boundaries and local marketing areas, and sells the product to local distributors, local retailers, or end users.

printed circuit: A method of manufacturing parts of electronic equipment in which the wiring between components, and certain fixed components themselves, are printed on to an insulating board.

Printed circuit (PC) board: A fiberglass board with copper foil as the conductors to interconnect the attached electrical components.

Printer converter. : A coaxial converter that allows an asynchronous printer to emulate an ibm 3287 printer.

Priority. : See precedence designations.

Privacy. : The rights of individuals to control or influence what information related to them may be collected and stored, and by whom and to whom that information may be disclosed. (nato)

Private fueling facility: A fueling facility which normally services only fleets and is not open to the general public.

Private key. : A cryptographic key used in a dual key system, uniquely associated with an entity and not made public; it is used to generate a digital signature. This key is linked mathematically with a corresponding public key.

Private line. : Same as leased line.

Privately owned electric utility: A class of ownership found in the electric power industry where the utility is regulated and authorized to achieve an allowed rate of return.

Privilegeasserter. : A privilege holder is using the attribute certificate or public-key certificate to assert privilege.

privilege management infrastructure (pmi). : The infrastructure, able to support the management of privileges, in support of a comprehensive authorisation service and in relationship with a public key infrastructure.

Privilege policy. : The policy that outlines conditions for privilege verifiers to provided/preform sensitive services to/for qualified privilege asserters. Privilege policy relates attributes associated with the service as well as attributes associated with privilege asserters.

Privilege verifier. : An entity verifying certificates against a privilege policy

Probable (indicated) reserves, coal: Reserves or resources for which tonnage and grade are

computed partly from specific measurements, samples, or production data and partly from projection for a reasonable distance on the basis of geological evidence. The sites available are too widely or otherwise inappropriately spaced to permit the mineral bodies to be outlined completely or the grade established throughout.

Probable energy reserves: Estimated quantities of energy sources that, on the basis of geologic evidence that supports projections from proved reserves, can reasonably be expected to exist and be recoverable under existing economic and operating conditions. Site information is insufficient to establish with confidence the location, quality, and grades of the energy source. Note This term is equivalent to "Indicated Reserves" as defined in the resource/reserve classification contained in the U.S. Geological Survey Circular 831, 1980. Measured and indicated reserves, when combined, constitute demonstrated reserves.

probe: An oscilloscope input device, usually having a pointed metal tip for making electrical contact with a circuit element and a flexible cable for transmitting the signal to the oscilloscope.

Procedure message. : A message in which the text contains only prosigns, operating signals, addressee designation(s), identification of messages, parts of messages, and amplifying data, as necessary.

Procedure sign (prosign). : One or more letters or characters or combination thereof, used to facilitate communication by conveying, in a condensed standard form, certain frequently used orders, instructions, requests and information related to communications.

Procedure word (proword). : A word or phrase used in messaging procedures and used in lieu of a prosign.

Process Capability: The amount of variation in the output of a controlled manufacturing process, the range defined by plus or minus three standard deviations.

Process Control: Flow to pressure for steam flow for oil pressure for 02 blow. Auto/manual that transfers steam supply from flow to pressure or pressure to flow.

Process cooling and refrigeration: The direct process end use in which energy is used to lower the temperature of substances involved in the manufacturing process. Examples include freezing processed meats for later sale in the food industry and lowering the temperature of chemical feedstocks below ambient temperature for use in reactions in the chemical industries. Not included are uses such as air-conditioning for personal comfort and cafeteria refrigeration.

Process fuel: All energy consumed in the acquisition, processing, and transportation of energy. Quantifiable process fuel includes three categories natural gas lease and plant operations, natural gas pipeline operations, and oil refinery operations.

Process heating or cooling demand-side management (DSM) program: A DSM program designed to promote increased electric energy efficiency applications in industrial process heating or cooling.

Process heating or cooling waste heatrecovery: An energy conservation system whereby some space heating or water heating is done by actively capturing byproduct heat that would otherwise be ejected into the environment. In nonresidential buildings, sources of waste heat include refrigeration/air-conditioner compressors, manufacturing or other processes, data processing centers, lighting fixtures, ventilation exhaust air, and the occupants themselves. Not to be considered is the passive use of radiant heat from lighting, workers, motors, ovens,

etc., when there are no special systems for collecting and redistributing heat.

Process Parameter: An I.M.I.S. screen used to find customer specifications.

Processed gas: Natural gas that has gone through a processing plant.

Processing: Uranium-recovery operations whether at a mill, an in situ leach, byproduct plant, or other type of recovery operation.

Processing gain: The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing loss: The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a higher specific gravity than the crude oil processed.

Processing of uranium: The recovery of uranium produced by nonconventional mining methods, i.e., in situ leach mining, as a byproduct of copper or phosphate mining, or heap leaching.

Processing plant: A surface installation designed to separate and recover natural gas liquids from a stream of produced natural gas through the processes of condensation, absorption, adsorption, refrigeration, or other methods and to control the quality of natural gas marketed and/or returned to oil or gas reservoirs for pressure maintenance, repressuring, or cycling.

Produced Ip Number: The IPM number assigned to a produced coil by the delivery end of the unit. Any units from the caster get an IPM# when processed.

Producer: A company engaged in the production and sale of natural gas from gas or oil wells with delivery generally at a point at or near the wellhead, the field, or the tailgate of a gas processing plant. For the purpose of company classification, a company primarily engaged in the exploration for, development of, and/or production of oil and/or natural gas.

Producer and distributor coal stocks: Producer and distributor coal stocks consist of coal held in stock by producers/distributors at the end of a reporting period.

Producer contracted reserves: The volume of recoverable salable gas reserves committed to or controlled by the reporting pipeline company as the buyer in gas purchase contracts with the independent producer as seller, including warranty contracts, and which are used for acts and services for which the company has received certificate authorization from the Federal Energy Regulatory Commission.

Producing property: A term often used in reference to a property, well, or mine that produces wasting natural resources. The term means a property that produces in paying quantities (that is, one for which proceeds from production exceed operating expenses).

Product Analysis: In castings, the analysis of the actual part as opposed to the analysis of the steel from which the casting was poured.

Product supplied: Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas-processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows field production, plus refinery production, plus imports, plus unaccounted-for crude oil (plus net receipts when calculated on a PAD District basis) minus stock change, minus crude oil losses, minus refinery inputs, and minus exports.

Production: See production terms associated with specific energy types.

Production capacity: The amount of product that can be produced from processing facilities.

production costing : A method used to determine the most economical way to operate a given system of power resources under given load conditions.

Production costs: Costs incurred to operate and maintain wells and related equipment and facilities, including depreciation and applicable operating costs of support equipment and facilities and other costs of operating and maintaining those wells and related equipment and facilities. They become part of the cost of oil and gas produced. The following are examples of production costs (sometimes called lifting costs) costs of labor to operate the wells and related equipment and facilities; repair and maintenance costs; the costs of materials, supplies, and fuels consumed and services utilized in operating the wells and related equipment and facilities; the costs of property taxes and insurance applicable to proved properties and wells and related equipment and facilities; the costs of severance taxes. Depreciation, depletion, and amortization (DDA) of capitalized acquisition, exploration, and development costs are not production costs, but also become part of the cost of oil and gas produced along with production (lifting) costs identified above. Production costs include the following subcategories of costs well workers and maintenance; operating fluid injections and improved recovery programs; operating gas processing plants; ad valorem taxes; production or severance taxes; other, including overhead.

Production expenses: Costs incurred in the production of electric power that conform to the accounting requirements of the Operation and Maintenance Expense Accounts of the FERC Uniform System of Accounts.

Production payments: A contractual arrangement providing a mineral interest that gives the owner a right to receive a fraction of production, or of proceeds from the sale of production, until a specified quantity of minerals (or a definite sum of money, including interest) has been received.

Production plant liquids: The volume of liquids removed from natural gas in natural gas processing plants or cycling plants during the year.

Production Welding: Any welding carried out during manufacturing before final delivery to the purchaser. This includes joint welding of casting and finishing welding.

production : The act or process of generating electric energy.

Production, crude oil: The volumes of crude oil that are extracted from oil reservoirs. These volumes are determined through measurement of the volumes delivered from lease storage tanks or at the point of custody transfer, with adjustment for (1) net differences between opening and closing lease inventories and (2) basic sediment and water. Crude oil used on the lease is considered production.

Production, lease condensate: The volume of lease condensate produced. Lease condensate volumes include only those volumes recovered from lease or field separation facilities.

Production, natural gas: The volume of natural gas withdrawn from reservoirs less (1) the volume returned to such reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; less (2) shrinkage resulting from the removal of lease condensate; and less (3) nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable. Volumes of gas withdrawn from gas storage reservoirs and native gas, which has been transferred to the storage category, are not considered production. Flared and vented gas is also considered production. (This differs from "Marketed Production" which excludes

flared and vented gas.)

Production, natural gas liquids: Production of natural gas liquids is classified as follows

Production, natural gas, dry: The volume of natural gas withdrawn from reservoirs during the report year less

Production, natural gas, wet after lease separation: The volume of natural gas withdrawn from reservoirs less (1) the volume returned to such reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; less (2) shrinkage resulting from the removal of lease condensate; and less (3) nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable. Note Volumes of gas withdrawn from gas storage reservoirs and native gas that has been transferred to the storage category are not considered part of production. This production concept is not the same as marketed production, which excludes vented and flared gas.

Production, oil and gas: The lifting of oil and gas to the surface and gathering, treating, field processing (as in the case of processing gas to extract liquid hydrocarbons), and field storage. The production function shall normally be regarded as terminating at the outlet valve on the lease or field production storage tank. If unusual physical or operational circumstances exist, it may be more appropriate to regard the production function as terminating at the first point at which oil, gas, or gas liquids are delivered to a main pipeline, a common carrier, a refinery, or a marine terminal.

Production, wet after lease separation: See production, natural gas, wet after lease separation.

Productive capacity: The maximum amount of coal that a mining operation can produce or process during a period with the existing mining equipment and/or preparation plant in place, assuming that the labor and materials sufficient to utilize the plant and equipment are available, and that the market exists for the maximum production.

Proeutectoid: The constituent that separates out of a solid solution before the formation of eutectoid.

Profile: A wrought product that is long in relation to its cross sectional dimensions which is of a form other than of sheet plate, rod, bar, tube, wire or roll.

Profile. : (in packet-switched networks) a set of parameter values, such as for a terminal, which can be defined and stored; the parameters can then be recalled and used as a group by identifying and selecting the appropriate profile.

Profiling: A process that charts the gauge of steel across the width and/or length.

Profilometer: An instrument used to measure the heights and depths of surface features.

Profit: The income remaining after all business expenses are paid.

Proforma (message). : A standard form of message, the nature of the successive elements of which is understood by pre-arrangement.

Program cost: Utility costs that reflect the total cash expenditures for the year, reported in nominal dollars, that flowed out to support DSM (demand-side management) programs. They are reported in the year they are incurred, regardless of when the actual effects occur.

Program. : A set of instructions for a computer. See software and firmware.

Programmable Logic Controller: A programmable logic controller (PLC) is a real-time electronic automation component used to control electromechanical systems. PLC's are designed to accommodate multiple inputs and outputs, include the ability to respond to system

feedback devices. PLC's are also designed to operate over a range of operating conditions and to minimize the negative effects of electrical noise, vibration, and damage.

Progressive Aging: An aging process in which the temperature of the alloy is continuously increased during the aging cycle. The temperature may be increased in steps or by any other progressive method. Compare with interrupted aging.

Prohibited Approach Boundary: An approach limit at a distance from an exposed live part within which work is considered the same as making contact with the live part.

project financing : Most commonly used method to finance the construction of independent power facilities. Typically, the developer pledges the value of the plant and part or all of its expected revenues as collateral to secure financing from private lenders.

Projected area: The net south-facing glazing area projected on a vertical plane.

Projection Welding: A welding process that uses small projections on one or both components of the weld to localize the heat and pressure, the projections collapse when the weld is made.

pROM: A ROM that can be programmed by the user. It cannot be reprogrammed.

Prom, programmable read-only memory. : Permanently stored data in a non-volatile semiconductor device. Compare with eprom, ram and rom.

Proof Pressure: The level of pressure at which a component, pipe, tube, hose or other fluid passage will not yield during application of internal pressure. Normally 1.5 times working pressure.

Proof Pressure (Overload Pressure): The maximum pressure that can be applied to the sensing element of a transducer without causing permanent change in the output specifications.

Proof Stress: (1) The stress that will cause a specified small permanent set in a material. (2) A specified stress to be applied to a member or structure to indicate its ability to withstand service loads.

Propagation Constant: A complex quantity characteristic of a radio frequency transmission line which indicates the effect of the line on the transmitted wave. The real part indicates the attenuation and the imaginary part the phase shift.

Propagation delay (satellite). : The finite time taken by radio waves travelling on the up link and down link; typically 260 msec for each leg for geosynchronous orbit satellites.

Propagation delay.

Propagation. : The manner in which an electromagnetic emission travels outward from its source.

Propane : 38A straight-chain saturated (paraffinic) hydrocarbon extracted from natural gas or refinery gas streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -44 degrees Fahrenheit. It includes all products designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial (HD-5) propane.

Propane air: A mixture of propane and air resulting in a gaseous fuel suitable for pipeline distribution.

Propane, consumer grade: A normally gaseous paraffinic compound (C₃H₈), which includes all products covered by Natural Gas Policy Act Specifications for commercial and HD-5 propane and ASTM Specification D 1835. Excludes feedstock propanes, which are

propanes not classified as consumer grade propanes, including the propane portion of any natural gas liquid mixes, i.e., butane-propane mix.

Proportional Limit: The greatest stress that the material is capable of sustaining without a deviation from the law of proportionality of stress to strain (Hooke's Law).

Propagation Delay: Time between when a signal is transmitted and when it is received at the opposite end of the cable.

Proportional interest in investee reserves: The proportional interest at the end of the year in the reserves of investees that are accounted for by the equity method.

Proportional Valve: An electronically measured valve capable of a high flow rate and low pressure drop. Suitable for position, speed or force control in hydraulically controlled valves.

Proposed rates: New electric rate schedule proposed by an applicant to become effective at a future date.

Propylene : 36An olefinic hydrocarbon recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Propylene is an important petrochemical feedstock.

prorated bills : The computation of a bill based upon proportionate distribution of the applicable billing schedule.

Prosign. : See procedure sign (prosign).

Prospecting: The search for an area of probable mineralization; the search normally includes topographical, geological, and geophysical studies of relatively large areas undertaken in an attempt to locate specific areas warranting detailed exploration. Prospecting usually occurs prior to the acquisition of mineral rights.

Prospecting costs: Direct and indirect costs incurred to identify areas of interest that may warrant detailed exploration. Such costs include those incurred for topographical, geological, and geophysical studies; rights of access to properties in order to conduct such studies, salaries, equipment, instruments, and supplies for geologists, including geophysical crews, and others conducting such studies; and overhead that can be identified with those activities.

prospective fault current: The value of overcurrent at a given point in a circuit resulting from a fault of negligible impedance between live conductors having a difference of potential under normal operating conditions, or between a live conductor and an exposed conductive part.

Protected frequency. : A frequency on which interference must be minimized using special precautions, if necessary. See taboo frequency.

Protected Zone: The portion of a power system protected by a given protection system or a part of that protection system.

Protection Equipment: The apparatus, including protection relay, transformers and ancillary equipment, for use in a protection system.

protection radio (rf). : The minimum value of the wanted-to-unwanted signal ratio, usually expressed in decibels, at the receiver input, determined under specified conditions such that a specified reception quality of the wanted signal is achieved at the receiver output.

Protection Relay: A relay designed to initiate disconnection of a part of an electrical installation or to a warning signal, in the case of a fault or other abnormal condition in the installation. A protection relay may include more than one electrical element and accessor

Protection Scheme: The coordinated arrangements for the protection of one or more

elements of a power system. A protection scheme may compromise several protection systems.

Protection System: A combination of protection equipment designed to secure, under predetermined conditions, usually abnormal, the disconnection of an element of a power system, or to give an alarm signal, or both.

Protection Tube: A metal, graphite, or ceramic tube which shrouds and protects the wires of a thermoelectric pyrometer.

protective conductor current: Electric current which flows in a prospective conductor under normal operating conditions

protective conductor : A conductor used for some measures of protection against electric shock and intended for connecting together any of the following partsexposed conductive parts, extraneous conductive parts, the main earthing terminal ,earth electrode(s),the earthed point of the source, or an artificial neutral.

Protective Device Numbers, ANSI: 2 Timedelay, 21 Distance, 25 Synchronismcheck, 27 Undervoltage, 30 Annunciator, 32 Directional power, 37 Undercurrent or underpower, 38 Bearing, 40 Field, 46 Reversephase, 47 Phasesequence voltage, 49 Thermal, 50 Instantaneous

protective earth conductor: Conductor to be connected between the protective earth terminal and an external protective earthing system.

protective earth terminal : Terminal connected to conductive parts of Class I equipment for safety purposes. This terminal is intended to be connected to an external earthing system by a protective earth conductor.

Protective Equipment: Equipment in a distribution system such as protective relays, cutout switches, disconnect switches, lightning arresters, and fuses. These all work in concert to open circuits whenever a short circuit, lightning strikes or other disruptive event occurs.

protective extra low voltage PELV : An extra low voltage system which is not electrically separated from earth, but which otherwise satisfies all the requirements for SELV.

protective multiple earthing (PME) : An earthing arrangement, found in TN C S systems, in which the supply neutral conductor is used to connect the earthing conductor of an installation with Earth, in accordance with the Electricity Safety, Quality and Continuity Regulations 2002.

Protocol: Defined sequence of bits, characters, and control codes used to transfer data among computer-based devices.

Protocol: Protocols are communication standards set to facilitate the many connections made by computers via modems and other digital connections. Some protocols are PPP, TCP/IP, SLIP, and FTP.

Protocol: A set of rules governing the transmission of information over a data channel.

Protocol converter. : A device that translates from one communications protocol into another, such as ibm sna/sdlc to ascii; compare with gateway.

Protocol. : Hardware and software procedures used to control the transfer of data in communications networks and between networks and subscriber.

Protocol. : See communications protocol.

Prototype: Original design or first operating model.

Proved (measured) reserves, coal: Reserves or resources for which tonnage is computed from dimensions revealed in outcrops, trenches, workings, and drill holes and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling,

and measurement are spaced so closely and the geologic character is so well defined that size, shape, and mineral content are well established. The computed tonnage and grade are judged to be accurate within limits that are stated, and no such limit is judged to be different from the computed tonnage or grade by more than 20 percent.

Proved energy reserves: Estimated quantities of energy sources that analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable under existing economic and operating conditions. The location, quantity, and grade of the energy source are usually considered to be well established in such reserves. Note This term is equivalent to "Measured Reserves" as defined in the resource/reserve classification contained in the U.S. Geological Survey Circular 831, 1980. Measured and indicated reserves, when combined, constitute demonstrated reserves.

Proword. : See procedure word (proword).

Proximate analysis,: determines, on an as-received basis, the moisture content, volatile matter (gases released when coal is heated), fixed carbon (solid fuel left after the volatile matter is driven off), and ash (impurities consisting of silica, iron, alumina, and other incombustible matter). The moisture content affects the ease with which coal can be handled and burned. The amount of volatile matter and fixed carbon provides guidelines for determining the intensity of the heat produced. Ash increases the weight of coal, adds to the cost of handling, and can cause problems such as clinkering and slagging in boilers and furnaces.

Proximity Effect: The phenomena of nonuniform current distribution over the cross-section of a conductor caused by the variation of the current in an adjoining conductor.

proximity sensor or proximity switch : A sensor or switch with the ability to detect it's relationship to a metal target without making physical contact.

Proxy Server: A system that caches items from other servers to speed up access. On the web, a proxy first attempts to find data locally, and if it is not available, obtains it from the remote server where the data resides permanently.

PS: Thermostat cable with solid conductors, individual rubber insulation and cotton braid. Twisted, rubber jacket and cotton braid overall.

PS (Lighting): Pole Spacing

Pseudo-noise (pn) sequence. : A binary sequence with a very desirable transorthogonal auto-correlation property; commonly used for synchronisation and ranging.

psi: Pounds per square inch

PSI: Pound per square inch.

Psi : Pounds per square inch.

psi lb/in: 2 Unit of pressure in the imperial system.1 psi = 6895 pa

Psk, phase shift keying. : A phase modulation technique in which phase shifts represent signalling elements; compare with fsk.

PSTN: Public Switched Telephone Network is the concentration of the world's public circuitswitched telephone networks. Originally a network of fixedline analog telephone systems, the PSTN is now almost entirely digital, and now includes mobile as well as fixe

Pstn. Public switched telephone network. : The familiar telephone system over which calls can be dialled.

PT: See "Potential Transformer".

PTFE: Polytetrafluoroethylene, a synthetic fluoropolymer of tetrafluoroethylene (TFE). A thermoplastic polymer known for high strength, toughness and flexibility.

Pto, public telecommunications operator. : An organisation empowered to offer telecommunications services to the public. Often the same as a ptt.

PTS: Per-trunk signaling

Ptt, post, telephone and telegraphy authority. : The governmental agency that functions as the communications common carrier and administrator in many areas of the world.

P-type semiconductor: A semiconductor in which holes carry the current; produced by doping an intrinsic semiconductor with an electron acceptor impurity (e.g., boron in silicon).

Public authorities: Electricity supplied to municipalities, divisions, or agencies of state and Federal governments, usually under special contracts or agreements that are applicable only to public authorities.

Public authority service to public authorities: Public authority service includes electricity supplied and services rendered to municipalities or divisions or agencies of State or Federal governments under special contracts, agreements, or service classifications applicable only to public authorities.

Public grade messaging.: Any messaging service that uses the internet as core infrastructure. It is optimised for wide accessibility, but characterised by high risk of non-availability and therefore unsuitable for purposes directly in support of military operations. (uk)

Public key certificate. : The public key of a user, together with some other information, rendered unforgeable by encipherment with the private key of a certification authority, which issued it.

Public key infrastructure. (pki). : The infrastructure required to support a scheme utilising the management of public keys able to support authentication, encryption, scheme for the guarantee of integrity and confidentiality. Pki also supports recipient and originator nonrepudiation services. (uk)

Public key. : A cryptographic key used in a dual key system, uniquely associated with an entity and made public. It is used to verify a digital signature. This key is linked mathematically with a corresponding private key.

Public street and highway lighting: Electricity supplied and services rendered for the purpose of lighting streets, highways, parks, and other public places; or for traffic or other signal system service, for municipalities or other divisions or agencies of State or Federal governments.

public switched network. : Any switching communications system - such as the telex, twx or public telephone networks - that provides circuit switching to many customers.

Public telephone network. : A telephone network which is shared among many users, any one of which can establish communications with any other user by use of a dial or push-button telephone; include ddd service. In the united kingdom and some other countries, the network is known as the pstn, public switched telephone network.

Public utility: Enterprise providing essential public services, such as electric, gas, telephone, water, and sewer under legally established monopoly conditions.

public utility commission : State regulatory agencies that provide oversight, policy guidelines and direction to public utilities including electricity.

Public utility district: Municipal corporations organized to provide electric service to both

incorporated cities and towns and unincorporated rural areas.

Public Utility Holding Company Act of 1935 (PUHCA): This act prohibits acquisition of any wholesale or retail electric business through a holding company unless that business forms part of an integrated public utility system when combined with the utility's other electric business. The legislation also restricts ownership of an electric business by non-utility corporations.

Public Utility Regulatory Policies Act of 1978: The Public Utility Regulatory Policies Act of 1978, passed by the U.S. Congress. This statute requires States to implement utility conservation programs and create special markets for co-generators and small producers who meet certain standards, including the requirement that States set the prices and quantities of power the utilities must buy from such facilities.

Public Utility Regulatory Policies Act (PURPA) of 1978: One part of the National Energy Act, PURPA contains measures designed to encourage the conservation of energy, more efficient use of resources, and equitable rates. Principal among these were suggested retail rate reforms and new incentives for production of electricity by cogenerators and users of renewable resources. The Commission has primary authority for implementing several key PURPA programs.

public utility : A utility operated by a non-profit governmental or quasi-governmental entity. Public utilities include municipal utilities, cooperatives, and power marketing authorities.

Publicly accessible network(s) : Network accessible to the general public, such as the Internet. (uk)

Publicly owned electric utility: A class of ownership found in the electric power industry. This group includes those utilities operated by municipalities and State and Federal power agencies.

publicly owned utilities : Municipal utilities (utilities owned by branches of local government) and/or co-operatives (utilities owned cooperatively by consumers).

PUC: Public Utility Commission

PUD: See Public Utility District

Puddling Process: A process for making wrought iron in which cast iron is melted in a hearth furnace and rabbled with slag and oxide until a pasty mass is obtained. This process was developed by Henry Cort about 1784 and remained in use until 1957, although on a very small scale during the present century.

Pug Mill: A mixing device used to mix materials coming off of #21 conveyor belt.

Pugnill: A mill for mixing foundry sands and sand mixtures consisting essentially of a shaft fitted with plows or paddle wheel which revolve in a tub or vat.

PUHCA: See Public Utility Holding Company Act of 1935

Pull: The tension in pounds or kilograms required to pull a cable or wire into a duct or conduit or into an overhead location.

Pull Chain Lampholder: An incandescent lampholder containing a switching mechanism that is actuated by pulling downward on a beaded chain.

Pull Out Torque: Also known as breakdown torque, this is the maximum amount of torque that is available from the motor shaft when the motor is operating at full voltage and is running at full speed. The load is then increased until the maximum point is reached.

Pull Switch: A switch with an actuator mechanism operated by a downward or outward pull

Pull Tension: A noun referring to the installation of one or more cables.

Pull Up Torque: The lowest point on the torque speed curve for a motor that is accelerating a load up to full speed is called the pull up torque. Some motor designs do not have a value of pull up torque because the lowest point may occur at the locked rotor point. In this case pull up torque is the same as locked rotor torque.

Pulling: The act of installing one or more cables.

Pulling Grip: A reusable wire mesh grip for pulling cable, rope or bare conductor

Pulling Tension: The amount of pull (foot-pounds of tension) placed on a cable during installation.

Pulp chips: Timber or residues processed into small pieces of wood of more or less uniform dimensions with minimal amounts of bark.

Pulp wood: Roundwood, whole-tree chips, or wood residues.

Pulping liquor (black liquor): The alkaline spent liquor removed from the digesters in the process of chemically pulping wood. After evaporation, the liquor is burned as a fuel in a recovery furnace that permits the recovery of certain basic chemicals.

Pulse analyzer.: An equipment used for analyzing pulses in order to determine their time, amplitude, duration, shape and other characteristics.

Pulse Cable: A cable specifically constructed to withstand and transmit repeated high voltage pulses without undue physical or electrical degradation.

Pulse code modulation (telephony) (pcm(t)). : A method of converting analogue speech into digital by sampling the speech many thousands of times each second. Used worldwide by ptt for digitized telephone transmissions.

Pulse length/width/duration. : The nominal duration of a standard pulse which is the time interval between the half amplitude points on the rise and decay points of the curve. For pulses and other shapes, the points on the curve must be stated.

Pulse Modulated: Light sources that are pulsed (ON/OFF) at a high frequency by an oscillator circuit. The receiver of a pulse modulated photoelectric only receives light at that frequency, thus minimizing interference from ambient light.

Pulse modulation. : Modification of one or more of the characteristics of a pulse train used as a carrier. Also, modulation of a continuous wave carrier (whether already modulated or not) by means of pulses.

Pulse Oximeter: A pulse oximeter is non-invasive medical device used to determine the oxygen level in a person's blood. Pulse oximeters are slipped onto the patients fingertip and a pair of light emitting diodes transmit light to a photosensor on the other side of the oximeter. The two diodes operate at red and infrared wavelengths and the difference in absorption rates yields the blood oxygen level, with 95 to 100% being a normal reading.

Pulse repetition frequency/rate (prf/prr). : The number of pulses per second.

Pulse shape. : The figure produced by the outline of a pulse when viewed on a cathode ray tube.

pulse width modulation: PWM Control of the width of pulses for the purpose of information transmission.

Pulse, rf. : A train of radio frequency oscillations whose envelope has the form of a pulse.

pulse. : A variation in the value of an electrical quality as a function of time such that the value departs from a given datum for a time interval and then returns to this datum for a much

longer time.

Pulse-width-modulated (pwm) wave inverter (PWM): PWM inverters are the most expensive, but produce a high quality of output signal at minimum current harmonics. The output voltage is very close to sinusoidal.

Pulverized coal: is a coal that has been crushed to a fine dust in a grinding mill. It is blown into the combustion zone of a furnace and burns very rapidly and efficiently.

Pulverized Coal Injection System (Pci): A blast furnace enhancement to reduce an integrated mill's reliance on coke (because of environmental problems with its production). Up to 30% of the coke charged into the blast furnace can be replaced by this talcum like coal powder, which is injected through nozzles at the bottom of the furnace.

Pump : A device that moves oil or grease into a system (in gallons per minute).

Pump Capacity: The gallons per minute that a pump puts out.

Pump Room Master: Controller which monitors the difference in feed water header and steam header pressures at all times and makes changes in pump output to maintain the feed water pressure at 150 psi greater than the steam pressure at all times.

Pump Select Button: Push buttons on the hydraulic systems and the morgoil system control panels that must be pressed to determine if a pump is in off, on or stand by mode.

pumped storage hydroelectric plant: A plant that usually generates electric energy during peak-load periods by using water previously pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available.

pumped storage : A facility designed to generate electric power during peak load periods with a hydroelectric plant using water pumped into a storage reservoir during off-peak periods.

Pumped-storage hydroelectric plant: A plant that usually generates electric energy during peak load periods by using water previously pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available to do so. When additional generating capacity is needed, the water can be released from the reservoir through a conduit to turbine generators located in a power plant at a lower level.

Punch: A shearing operation to remove a section of metal as outlined by the inner parting line in a blocked or finished forging: the operation is generally performed on a trim press using a punch die. A tool used in punching holes in metal. The moveable die in a press or forging machine.

punch mine: is a type of small drift mine used to recover coal from strip-mine highwalls or from small, otherwise uneconomical, coal deposits. A shaft mine is driven vertically to the coal deposit. A slope mine is driven at an angle to reach the coal deposit.

Punchdown: Securing a conductor to a wiring terminal by placing the insulated conductor in the terminal groove and pushing down with a "punchdown" (impact) tool - creating an insulation displacement connection (IDC).

Punching: Shearing holes in sheet metal with punch and die.

Punchout Machines: A machine used to force the entire sand and casting contents from the molding box in one motion, without the use of vibration.

Pup Coil: A small coil weighing on the average from 1500 to 6000 pounds. These coils usually contain defects that are unacceptable to the average customer.

Purchase-contract imports of uranium: The amount of foreign-origin uranium material

that enters the United States during a survey year as reported on the "Uranium Industry Annual Survey (UIAS), Form EIA-858, as purchases of uranium ore, U₃O₈, natural UF₆, or enriched UF₆. The amount of foreign-origin uranium materials that enter the country during a survey year under other types of contracts, i.e., loans and exchanges, is excluded.

Purchased: Receipts into transportation, storage, and/or distribution facilities within a state under gas purchase contracts or agreements whether or not billing or payment occurred during the report year.

Purchased power: Power purchased or available for purchase from a source outside the system.

Purchased power adjustment: A clause in a rate schedule that provides for adjustments to the bill when energy from another electric system is acquired and its cost varies from a specified unit base amount.

purchased power adjustment : A clause in a rate schedule that provides for adjustments to a bill when energy from another system is acquired.

Pure pumped-storage hydroelectric plant: A plant that produces power only from water that has previously been pumped to an upper reservoir.

Purging : Elimination of air and other undesirable gases from furnaces or heating boxes.

Purging Steam: Low pressure steam used to purge a line or manifold.

Purifier Tank: A vessel containing a baffle or separator through which steam, produced by the boiler continuous blow down flash process, is fed. The purifier separates unwanted carryover, such as dirt or excess moisture, from the steam before it is returned to the system.

PURPA: See Public Utility Regulatory Policies Act of 1978

Push Back: That property of a braid or shield which allows the braid or shield to be pushed back along the cable core easily.

Push Buttons: A push button is a component used to provide a contact interface between a human user and an electrical or mechanical device. Push buttons typically include words, symbols, and/or colors to help portray the action controlled by the button.

Push Through Lampholder: A lampholder having an insulated projection through its sides, which when pushed from either side, turns the lamp on or off.

Push/Push: A means of achieving the preset features on a rotary dimmer or fan speed control. The secondary switching mechanism is activated by pushing the knob at any preset of light or speed.

pushbutton: part of an electrical device, consisting of a button that must be pressed to effect an operation.

Put: An option, but not an obligation to sell. Nonferrous metal producers often buy puts to lock in a price for their metal. It is akin to a price insurance policy. For example, if a producer uses put options to lock in a price of 90 cents per pound and the price falls to 85 cents per pound, he would continue to make 90 cents per pound (See Options and Call).

Put-Up: Refers to packaging of wire and cable, the term itself refers to the packaged product that is ready to be stored or shipped out.

PV: Photovoltaic

PV: See "Photovoltaic"

PVC: See Photovoltaic Cell; polyvinyl chloride

PVC: Polyvinyl chloride, a common thermoplastic insulation and jacketing material used to

manufacture building wire and other types of wire and cable. It is also used in the manufacture of plastic conduit.

PVC Electrical Tape: PVC electrical tape is a soft, flexible plastic tape made from polyvinyl chloride (PVC). PVC is an insulating material, making it ideal for use in electrical applications.

PVC Extrusion: An extrusion is a component fabricated with a manufacturing process in which a material such as plastic, such as PVC, or a soft metal is pulled through a die. The extrusion process results in long pieces of material with a constant cross-sectional shape.

Pvc, permanent virtual circuit. : (in a packet-switched network) a fixed virtual circuit between 2 users; no call setup or clearing procedures are necessary; the pdn equivalent of a leased line. Contrast with svc.

PVCs that convert sunlight directly into energy: A method for producing energy by converting sunlight using photovoltaic cells (PVCs) that are solid-state single converter devices. Although currently not in wide usage, commercial customers have a growing interest in usage and, therefore, DOE has a growing interest in the impact of PVCs on energy consumption. Economically, PVCs are competitive with other sources of electricity.

PWR: See Pressurized-Water Reactor

PX: See California Power Exchange.

Pyrolysis: The thermal decomposition of biomass at high temperatures (greater than 400° F, or 200° C) in the absence of air. The end product of pyrolysis is a mixture of solids (char), liquids (oxygenated oils), and gases (methane, carbon monoxide, and carbon dioxide) with proportions determined by operating temperature, pressure, oxygen content, and other conditions.

Pyrometallurgy: Chemical metallurgical process dependent upon heat.

Pyrometer: An instrument of any of various types used for measuring temperatures.

Pyrometric Cone: A slender trihedral pyramid made of a mixture of minerals similar in composition to that of a clay or other refractory being tested. Each cone is assigned a number indicating its fusion temperature.

Pyrometric Cone Equivalent (Pce): An index of refractoriness obtained by heating on a time temperature schedule a cone of the sample material and a series of standardized pyrometric cones of increasing refractoriness.

Pyrometry: A method of measuring temperature with any type of temperature indicating instruments.

Pyrotechnics. : Ammunition containing chemicals that produce a smoke or brilliant light in burning, used for signalling or for lighting up an area at night; fireworks.

Q bit, qualifier bit. : (in x25 packet-switched networks). Bit 8 in first octet of packet header; it is used to indicate if packet contains control information.

Q Bop: Modified Basic Oxygen Furnace in which the oxygen and other gases are blown in from the bottom, rather than from the top. While the Q BOP stirs the metal bath more vigorously, allowing for faster processing, the design produces essentially the same steel grades as the top blowing basic oxygen furnace. Today's state of the art furnace design combines the previous technologies: 60% of the oxygen is blown from above, with the rest blown through the bottom of the vessel.

Qam, quadrature amplitude modulation. : A modulation technique that combines phase

modulation and am techniques to increase the number of bits per baud.

QF: See Qualifying Facility

QUAD: Quadrillion Btu 10¹⁵ Btu.

Quad: A measure of energy equal to one trillion Btus; an energy equivalent to approximately 172 million barrels of oil.

quadrant: Quarter circle. Sector of a circle bounded by an arc and two radii at right angles.

Quad-Rated Wire: The name for 90°C and 105°C wire which replaces four other types of wire - CSA TEW 105°C; 90°C MTW 600V; 90°C AWM 1000V; and 105°C AWM 600V.

quadratic equation: An equation involving terms up to the second power of the unknown quantity. It has two roots which satisfy the equation.

quadrature: Two quantities which are at right angle to each other.

Quadrature phased shift keying (qpsk). : This is widely used to increase the information rate in a given bandwidth. Four phases are used which are 45 degrees, 135 degrees, 225 degrees and 315 degrees. These phases represent four possible combinations of two binary bits, each allowing two modulations to take place using one baseband frequency. This method is used widely in satellite communications and on modern link systems. See bpsk.

Quadrillion: The quantity 1,000,000,000,000,000(10 to the 15th power).

Quadripartite combined joint warfare conference (qcjwc). : Qcjwc is an Organization composed of officials from australia, canada, the united kingdom and the united states. Its purpose is to ensure maximum defense force interoperability between the participating nations and others nations that are invited to participate.

quadrphase modulation. : Multiple-shift-keying where 4-phase states (in phase quadrature) of a sinusoidal carrier convey 4 digital intelligence stream codes.

Quadruplex Cable: A cable composed of four conductors twisted together, usually three insulated and a bare neutral.

Qualification test (Photovoltaic): A procedure applied to a selected set of Photovoltaic modules involving the application of defined electrical, mechanical, or thermal stress in a prescribed manner and amount. Test results are subject to a list of defined requirements.

Qualification Trials: The testing required for a new process adopted to make certain grades of steel with exacting end uses. In order for the process to become qualified, the steel made by the process must be tested.

Qualified employee (qualified person): One knowledgeable in the construction and operation of the electric power generation, transmission, and distribution equipment involved, along with the associated hazards.

Qualifying facility (QF): A cogeneration or small power production facility that meets certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC) pursuant to the Public Utility Regulatory Policies Act (PURPA).

Quality: Refers to the suitability and integrity of the steel for the purpose or purposes for which it is intended

quality control: Inspection, analysis and action required to ensure quality of output.

quality factor Q: The quality factor of a resonant circuit is the ratio of its resonant frequency to its bandwidth. The higher the quality factor, the lower the losses in the circuit and higher the resonant peak.

Quality or grade (of coal): An informal classification of coal relating to its suitability for use for a particular purpose. Refers to individual measurements such as heat value, fixed carbon, moisture, ash, sulfur, major, minor, and trace elements, coking properties, petrologic properties, and particular organic constituents. The individual quality elements may be aggregated in various ways to classify coal for such special purposes as metallurgical, gas, petrochemical, and blending usages.

quantisation error: The error caused by non-zero resolution of an analog to digital converter. It is an inherent error of the device.

Quantity wires charge: A fee for moving electricity over the transmission and/or distribution system that is based on the quantity of electricity that is transmitted.

Quantization Error: Inherent uncertainty in an A/D conversion due to the finite resolution of the conversion process.

quantum: One of the very small discrete packets into which many forms of energy are subdivided.

quantum electronics: Applying molecular physics to electronics.

quark: A hypothetical basic subatomic nuclear particle believed to be the basic component of protons, neutrons, etc.

Quarter Buckle: See ?Buckle, Quarter.?

Quarter Hard (No. 3 Temper): (A) In low carbon cold rolled strip steel, a medium soft temper produced by a limited amount of cold rolling after annealing. (B) In brass mill terminology. Quarter hard is one B and S number hard or 10.95% reduction. (C) In stainless steel terminology tempers are based on minimum tensile, or yield strength. For Chromium Nickel grades Quarter Hard Temper is 125,000 T. S., 75,000 Y.S. min.

Quarter Hard Temper: Cold Rolled steel produced to a Rockwell hardness range of 60 to 75 on the B scale. Product of this temper is intended for limited bending and cold forming and can be bent 90 degrees in the rolling direction and 180 degrees across the rolling direction over its own thickness.

Quarter-Phase or Two-Phase: A term characterizing a combination of two circuits energized by alternating voltage sources which differ in phase by a quarter of a cycle, 90 degrees.

Quartz: A form of silica occurring in hexagonal crystals which are commonly colorless and transparent, but sometimes also yellow, brown, purple, green, etc. It is the most common of all solid minerals. See also Silica

quartz: A form of silicone dioxide. Commonly used in the making of radio transmitters and heat resistant products.

Quartzite: A compact granular rock composed of quartz. It is a metamorphosed sandstone, and siliceous cement is often so blended with the quartz grains as to give the rock a nearly homogeneous texture. Primary material in silica brick.

Quench Aging: Aging that occurs after quenching following solution heat treatment.

Quench Crack: A crack resulting from thermal stress induced during rapid cooling or quenching, or from stresses induced by delayed transformations some time after the article has been fully quenched.

Quench Hardening: A process of hardening a ferrous alloy of suitable composition by heating within or above the transformation range and cooling at a rate sufficient to increase

the hardness substantially. The process usually involves the formation of martensite.

Quench Hardening (Steel): A process of hardening a ferrous alloy of suitable composition by heating within or above the transformation range and cooling at a rate sufficient to increase the hardness substantially. The process usually involves the formation of martensite.

Quench Severity: The quench severity is characterized by the H value and relates to the rate of temperature change during quenching.

Quench Tank: 1) Tank of water used to quickly cool the strip before it reaches the delivery end of the line. 2) The water bath which is used to cool the steel strip after it has been annealed on CA line or reflowed on the Tin plater.

Quencher Water: Water that keeps boiler duct work cool.

Queue. : A line or list formed by items waiting for service, such as tasks waiting to be performed, stations waiting for connection, or messages waiting for transmission.

Quick Disconnect: A mechanical device that may be engaged or dis engaged to attach two fluid passages. Typically, disengagement is possible by manual means.

Quick Disconnect: A type of connector shell that permits rapid locking and unlocking of two connector halves.

Quick Disconnect Coupling: A design feature, apparent in the quick disconnect connector; it permits relatively rapid joining and separation.

Quick Return: A mechanism on some machine tools that provide rapid movement of the ram or table on the return or onointing stroke of the machine.

quotient: Ratio.

R: Code rubber-insulated building wire, 600V, 60°C.

R Enamel: An unpigmented enamel used to increase resistance to corrosion, or decrease bleaching effect of tinplate on food can interiors.

R.M.S.: (Root Means Square) Used as an A.C. value of voltage or current. Expressed for example as 120 volts AC RMS.

R1 Valves: Double gated valves that allow particulate to drop out of the vacuum gas stream with minimal air loss.

Ra: Chemical symbol for Radium

Rabi frequency : Rabi frequency the characteristic coupling strength between a near-resonant elec-tromagnetic field and two states of a quan-tum mechanical system. For example, the Rabi frequency of an electric dipole allowed transition is equal to E/\hbar , where E is the electric dipole moment and E is the maxi-mum electric field amplitude. In a strongly driven 2-level system, the Rabi frequency is equal to the rate at which population oscil-lates between the ground and excited states.

RAC: Refiners' Acquisition Cost.

race condition : race condition a situation where multiple processes access and manipulate shared data with the outcome dependent on the relative timing of these processes.

Raceway: An enclosed channel designed expressly for holding conductors and cables, including conduit and tubing, wire ways, and bus ways.

raceway: An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars. Raceways include, but are not limited to, rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible conduit, flexible metallic tubing, flexible metal conduit, electrical nonmetallic tubing, electrical

metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

raceway : raceway a channel within a building which holds bare or insulated conductors.

Rack : An array of gears spaced on a straight bar.

Rack sales: Wholesale truckload sales or smaller of gasoline where title transfers at a terminal.

Rack-mount. : Designed to be installed in a cabinet.

rad : The unit of absorbed dose of ionising radiation. One rad is equal to the energy absorption of 100 ergs per gram of irradiated material.

radar: An acronym for RAdio Detection And Ranging. A general term now used to include any system employing microwaves for the purpose of locating, identifying, navigating, or guiding such moving objects as ships, aircraft, etc.

radar : radar an instrument that transmits elec-tromagnetic waves and receives properties of the reflected electromagnetic wave from the target, which can be used to determine the nature and distance to the target. Radar is an acronym that stands for radio detection and ranging.

Radar absorbent material (ram). : Material used in radar camouflage to reduce the echo area of an object.

Radar camouflage. : The use of radar absorbent or reflecting materials to change the radar echoing properties of a surface or an object.

Radar coverage. : The limits within which objects can be detected by one or more radar stations.

radar cross section (RCS) : radar cross section (RCS) a measure of the reflective strength of a radar target; usu-ally represented by the symbol σ , measured in square meters, and defined as 4 times the

radar echo (1). : The radio frequency energy received after reflection from an object.

Radar echo (2). : The term is also used to describe the deflection or change of intensity on a cathode ray tube display produced by a radar echo.

Radar height finder. : A radar intended to display the height of a target by measurement of its slant range and elevation angle.

Radar horizon. : Become tangential to the earth's surface. On the open sea this locus is horizontal but on land it varies according to the topographical features of the terrain.

Radar navigation. : The use of radar to assist in navigation and pilotage.

Radar recognition and identification (iff - identification, friend or foe). : A system using radar transmissions to which equipment carried by friendly forces automatically responds; for example by emitting pulses, thereby distinguishing themselves from enemy forces. It is the primary method of determining the friendly or unfriendly character of aircraft and ships by other aircraft or ships and by ground forces employing radar detection equipment and associated iff units. See also recognition and identification, electronic and selective identification feature (sif).

Radar reflectivity.: That property of an object which causes it to reflect radar waves, usually expressed in units of equivalent area of a flat reflector placed normal to the radar antenna.

Radar relay. : The transmission of radar video information to a remote display.

Radar repeater. : A unit, employing one or more cathode ray tubes, fitted with facilities for display of selected radar information in positions normally remote from the radar.

Radar scan. : One revolution of a search radar.

Radar sensitivity. : The degree of response of a radar receiver to signals on its frequency. A measure of the ability of the receiver to amplify and make usable very weak signals.

Radar shadows. : Region obscured from the surveillance of a radar set by obstructions, either natural or artificial.

Radar target simulator. : A device for producing a synthetic target on a radar display used for operator training.

Radar, navigational. : Radar equipment installed on a craft as an aid to its navigation.

radar, primary. : Radar that determines the distances, the direction and eventually, the height of objects by using only their reflection of incident radiation.

Radar, secondary. : Radar using automatic retransmission by the object of a special pulse code on a different radio frequency e.g. Iff.

Radar, tactical control.: A radar used for target allocation or target selection.

Radar. : Radio detection and ranging equipment, that determines the distance and usually the direction of objects by transmission and return of electromagnetic energy.

RADHAZ : RADHAZ radiation hazards to personnel as defined in ANSI/C95.1-1991 IEEE Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

Radial : In a direction directly outward from the center of a circle or sphere or from the axis of a cylinder. The spokes of a wheel, for example, are radial.

radial basis function network : radial basis function network a fully connected feedforward network with a single hidden layer of neurons each of which computes a nonlinear decreasing function of the distance between its received input and a "center point." This function is generally bell-shaped and has a different center point for each neuron. The center points and the widths of the bell shapes are learned from training data. The input weights usually have fixed values and may be prescribed on the basis of prior knowledge. The outputs have linear characteristics, and their weights are computed during training.

radial circuits: Each circuit commences from the consumer unit/distribution board through an MCB/fuse of specific rating (e.g. 20A), loop into each socket outlet but ends at a socket outlet (does not return to the original fuse/mcb). No loops are formed.

radial intensity histogram : radial intensity histogram a histogram of average intensities for a round object in circular bands centered at the center of the object, with radial distance as the running index. Such histograms are easily constructed, and, suitably normalised, form the basis for scrutinizing round objects for defects, and for measuring radius and radial distances of cylindrically symmetrical features.

Radial Ring Rolling Mill (RW): A type of ring forging equipment for producing seamless rolled rings by controlling only the outside and inside diameters.

Radial Roll: (main roll, king roll)

Radial Rolling Force: The action produced by the horizontal pressing force of the rolling mandrel acting against the ring and the main roll. Usually expressed in metric tons.

radial system : radial system a network of straight wires or other conductors radiating from the base of a vertical monopole antenna that simulates the presence of a highly conducting ground plane beneath the antenna. Typically, radial wires are approximately a quarter wavelength long and are arranged to have equiangular spacing between them. The radial wire

ends at the base of the monopole are electrically bonded together and to one conductor of the feedline.

radian (rad) : The radian is SI unit of the plane angle. It is a supplementary unit. It is defined as the plane angle between two radii of a circle that cut off on the circumference an arc equal in length to the radius.

Radiant barrier: A thin, reflective foil sheet that exhibits low radiant energy transmission and under certain conditions can block radiant heat transfer; installed in attics to reduce heat flow through a roof assembly into the living space.

Radiant ceiling panels: Ceiling panels that contain electric resistance heating elements embedded within them to provide radiant heat to a room.

radiant efficiency: Ratio of the radiant flux (power) emitted from a source to the power consumed.

Radiant energy: Energy that transmits away from its source in all directions.

Radiant Heat: Heat communicated by radiation and transmitted by electromagnetic waves.

Radiant Tube Annealing Box: A box which is heated, inside, by means of tubes in which gas is burned; the hot tubes radiate their heat to the covered pile of metal, standing on the base of the box. Usually a protective atmosphere is maintained in the box to protect the metal from oxidation.

radiation: radiation the phenomenon by which sources generate energy, which propagates away from them in the form of waves.

Radiation: The transfer of heat through matter or space by means of electromagnetic waves.

radiation: RF energy which is emitted or leaks from a distribution system and travels through space. These signals often cause interference with other communication services.

Radiation: The emission and propagation of energy by means of electromagnetic waves or particles.

Radiation (in radio communication) (1): The outward flow of radio frequency energy from a source.

Radiation (in radio communication) (2): Energy flowing in a medium in the form of radio waves.

Radiation Area: Any part of an installation accessible to employees in which there exists a radiation level of 7.5 millirem in any one hour over 150 millirem in any seven consecutive days.

radiation boundary condition (RBC) : radiation boundary condition (RBC) a boundary condition that is imposed to truncate the computational domain of a differential equation method so that it satisfies the Sommerfield radiation condition.

Radiation characteristics. : In electronic warfare. Features of a radiated signal such as frequency, pulse width, pulse repetition frequency, beamwidth, polarization, etc.

radiation condition : radiation condition the condition that specifies the field behavior at infinity; in fact, for an unbounded domain it is necessary to specify the field behavior on the surface at infinity. By assuming that all sources are contained in a finite region, only outgoing waves must be present at large distances from the sources; hence the field behavior at large distances from the sources must meet the physical requirement that energy travel away from the source region. This requirement is the Sommerfield “radiation condition” and constitutes a boundary condition on the surface at infinity. Let us denote with A any field component

transverse to the radial distance r and with k the free-space wavenumber. The transverse field of a spherically diverging wave in a homogeneous isotropic medium decays as $1/r$ at large distances r from the source region; locally, the spherical wave behaves like a plane wave traveling in the outward r direction. As such, each field component transverse to r must behave like $\exp(-jkr)/r$; this requirement may be phrased mathematically as

radiation efficiency : radiation efficiency in antenna theory, the ratio of radiated power to the amount of input power to the antenna. Has a value between 0 and 1, inclusive.

Radiation Hazard: Any situation where persons might be exposed to radiation in excess of the maximum permissible dose.

radiation intensity : radiation intensity in antenna theory, a far-field quantity that is a function of angle that gives the level of radiation in a specific direction. Radiation intensity is the radial component of the time average Poynting vector with all the terms associated with the distance from the antenna normalized out. The units are watts per square radian.

radiation pattern : radiation pattern a plot of the far-field radiation as a function of the angle ϕ or θ while the other angle is held constant. A radiation pattern can be either polar or rectangular, and can be either logarithmic or linear.

radiative broadening : radiative broadening a spectral line broadening mechanism that arises due to spontaneous decay of the excited state.

Radiative forcing: A change in average net radiation at the top of the troposphere (known as the tropopause) because of a change in either incoming solar or exiting infrared radiation. A positive radiative forcing tends on average to warm the earth's surface; a negative radiative forcing on average tends to cool the earth's surface. Greenhouse gases, when emitted into the atmosphere, trap infrared energy radiated from the earth's surface and therefore tend to produce positive radiative forcing. Also see Greenhouse gases.

radiative heat transfer : radiative heat transfer the process by which long-wave electromagnetic radiation transports heat from a surface to its surroundings.

Radiatively active gases: Gases that absorb incoming solar radiation or outgoing infrared radiation, affecting the vertical temperature profile of the atmosphere. Also see Radiative forcing.

Radiator: A heating unit usually exposed to view within the room or space to be heated; it transfers heat by radiation to objects within visible range and by conduction to the surrounding air, which in turn is circulated by natural convection; usually fed by steam or hot water.

radio: The use of electromagnetic radiation to communicate electrical signals without wires. In the widest sense the term incorporates sound broadcasting, television and radar.

Radio approach aids : Equipment making use of radio to determine the position of an aircraft with considerable accuracy from the time it is in the vicinity of an airfield or carrier until it reaches a position from which landing can be carried out.

radio astronomy : radio astronomy the study of celestial objects based on the investigation of their radio frequency electromagnetic waves spectrum.

Radio autocontrol : The control of an object by radio reference from itself to other objects.

Radio communication : See communication, radio.

Radio control : The control of mechanism of other apparatus by radio waves.

Radio detection : The detection of the presence of an object by radio-location without

precise determination of its position. Synonymous with radio-warning.

Radio determination. : The determination of position or the obtaining of information relating to position, by means of the propagation properties of radio waves. See its art 45.

Radio direction finding. : Radio location in which only the direction of a station is determined by means of its emission.

Radio doppler. : The direct determination of the radial component of the relative velocity of an object by an observed radio-frequency change due to such velocity.

Radio fix (1). : The locating of a radio transmitter by bearings taken from two or more direction finding stations, the site of the transmitter being at the point of intersection.

Radio fix (2). : The location of a ship or aircraft by determining the direction of radio signals coming to the ship or aircraft from two or more sending stations, the locations of which are known.

radio fixing aids. : Equipment making use of radio to assist a user to determine his geographical position.

radio frequency (RF) : radio frequency (RF) a general term used to refer to radio signals in the general frequency range from thousands of cycles per second (kHz) to millions of cycles per second (MHz). It is also often used generically and interchangeably with the term microwave to distinguish the high frequency AC portion of a circuit or signal from the DC bias signal or the downconverted intermediate frequency (IF) signal.

radio frequency choke : radio frequency choke an inductance (a coil of wire) intended to present a very high impedance at radio frequencies. Such frequencies span the range of kilohertz to hundreds of megahertz.

radio frequency integrated circuit (RFIC) : radio frequency integrated circuit (RFIC) integrated circuit designed to operate at radio frequencies as amplifiers, mixers, oscillators, detectors or combinations of above. Typically, RFICs are configured for specific application to operate as a complete RF system.

Radio Frequency Interference (RFI): Noise induced upon signal wires by ambient radio-frequency electromagnetic radiation with the effects of obscuring the instrument signal.

radio frequency interference (RFI) : radio frequency interference (RFI) electromagnetic phenomenon that either directly or indirectly contributes to degradation in the performance of a receiver or other RF system, synonymous with electromagnetic interference. See also electromagnetic interference.

Radio goniometry. : The determination of relative direction of a distant object by means of its radio emissions, whether independent, reflected or automatically retransmitted.

Radio homing aids. : Equipment permitting the use of radio to assist in the location of an area with sufficient accuracy to effect an approach.

radio horizon : radio horizon the maximum range, from transmitter to receiver on Earth's surface, of direct (line-of-sight) radio waves. This is greater than the optical horizon, because the radio waves follow a curved path as a result of the continuous refraction it undergoes in the atmosphere.

Radio landing aids. : Equipment permitting the use of radio to assist an aircraft in carrying out its actual landing.

Radio navigational aid. : Any radio facility designed or usable for navigation.

Radio position line determination. : Determination of a position line by radio location.

Radio range finding. : Radio location in which the distance of an object is determined by means of its radio emissions, whether independent, reflected or retransmitted on the same or other wave length. See also radio determination.

Radio recognition. : The determination by radio means of the friendly or enemy character, or the individuality, of another.

Radio relay system. : A communications system used to perform a radio relay function.

Radio silence. : A condition in which all or certain radio equipment capable of radiation is kept inoperative.

Radio sonobuoy. : See sonobuoy.

Radio station. : One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment necessary at one location for carrying a radio communications service.

Radio tele-control. : The distant control of mechanisms or other apparatus by radio waves.

Radio warning. : The detection of the presence of an object by radiolocation without precise determination of its position. Note. This function of radio is rarely used apart from others but must be separately defined. Synonymous with radio detection.

radio waves : radio waves electromagnetic radiation suitable for radio transmission in the range of frequencies from about 10 kHz to about 300 Mhz.

Radio waves. : See hertzian waves.

Radioactive Isotopes: Varieties of an element possessing the same chemical characteristics but emitting detectable radiation's by means of which they can be identified and traced.

Radioactive Material: Any compound or element which may emit any or all of the following: alpha and beta particles, electrons, photons neutrons and gamma and all other emissions which produce ionization directly or indirectly.

Radioactive waste: Materials left over from making nuclear energy. Radioactive waste can destroy living organisms if it is not stored safely.

Radioactive waste: Radioactive materials left over from making nuclear energy. Radioactive waste can harm people and the environment if it is not stored safely.

Radioactivity: The spontaneous emission of radiation from the nucleus of an atom. Radionuclides lose particles and energy through this process.

Radioactivity: The spontaneous decay of an unstable atomic nucleus, giving rise to the emission of radiation.

radio-activity: The property of spontaneous disintegration possessed by certain unstable types of atomic nuclei.

radio-frequency interference RFI: Electromagnetic signals of a frequency associated with electromagnetic radiation which are coupled to a conductor either directly or as with an antenna.

Radiography: A nondestructive method of internal examination in which metal objects are exposed to a beam of X ray or gamma radiation. Differences in thickness, density or absorption, caused by internal defects or inclusions, are apparent in the shadow image either on a fluorescent screen or on photographic film placed behind the object.

radiography : radiography an imaging modality that uses an X-ray source and collimator to create a projection image. The image intensity is proportional to the transmitted X-ray intensity.

Radioisotope: A radioactive isotope.

Radiolocation. : Determination of relative direction, position or motion of an object, or its detection, by means of propagation characteristics of radio waves. notes:(1). The characteristics generally employed are those of approximate constant velocity and/or rectilinearly.(2). The term radio determination is used for this concept in radio regulations 1959.

radiology : radiology the monitoring and control of radioactivity, especially in regard to human exposure, in a nuclear power plant.

radiometer : radiometer a passive receiver that detects energy from a transmitting source or re-radiated energy from a target. Typically, radiometers are used in remote sensing applications.

Radionavigation. : Radio determination used for the purposes of navigation, including obstruction warning.

Radionuclide: A radioactive isotope of an element.

Radiosonde. :

Radiotelegram. : A telegram originating in or intended for a mobile station or a mobile earth station transmitted on all or part of its route over the radio-communication channels of a mobile service or the mobile-satellite service. See also telegram.

Radiotoxicity: The adverse health effect of a radionuclide due to its radioactivity.

Radium: A radioactive element which the chemical symbol Ra; radium and its salts are used in gamma ray radiography because of their radioactivity. Melting point is 700 B0C (1292 B0F).

Radium: A radioactive decay product of uranium often found in uranium ore. It has several radioactive isotopes. Radium-226 decays to radon-222.

radius of curvature : radius of curvature one of the parameters characterizing the reflecting surface of a spherical mirror.

radix : radix the base number in a number system. Decimal (radix 10) and binary (radix 2) are two example number systems.

radix complement: radix complement in a system that uses binary (base 2) data negative numbers, can be represented as the two's complement of the positive number. This is also called a true complement.

Radon: A naturally occurring radioactive gas found in the United States in nearly all types of soil, rock, and water. It can migrate into most buildings. Studies have linked high concentrations of radon to lung cancer.

Radon (Rn): A heavy radioactive gas given off by rocks containing radium (or thorium). Rn-222 is the main isotope.

Radon daughters: Short-lived decay products of radon-222 (Po-218, Pb-214, Bi-214, Po-214).

Radon transform : Radon transform the Radon transform of a function $f(x, y; r, d; /$ is its line integral along a line inclined at angle from the y axis and at a distance d from the origin.

radwaste : radwaste a contraction for "radioactive waste," usually referring to mildly radioactive sludge removed from the coolant in a nuclear reactor.

Ragged Edges: Edges of Sheet or Strip which are torn, split, cracked, ragged or burred or otherwise disfigured.

RAID : RAID See redundant array of inexpensive disks.

Rail (method of transportation to consumers): Shipments of coal moved to consumers by rail (private or public/commercial). Includes coal hauled to or away from a railroad siding by truck.

Railroad and railway electric service: Electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

Railroad locomotive: Self-propelled vehicle that runs on rails and is used for moving railroad cars.

Railroad use: Sales to railroads for any use, including that used for heating buildings operated by railroads.

Rainproof: So constructed, projected, or treated as to prevent rain from interfering with the successful operation of the apparatus under specified test conditions.

Raintight: So constructed or protected that exposure to a beating rain will not result in the entrance of water.

Rake: That surface of a cutting tool against which the chips bear while being severed. If this surface is less than 90° from the surface being cut, the rake is positive. If more, the rake is negative.

RAKE receiver : RAKE receiver a receiver type in which the received signal from each (or a few dominating) resolvable propagation ray is individually demodulated and subsequently combined into one decision variable according to some criterion. RAKE receivers are commonly used in wideband transmission systems such as spread-spectrum systems where the large bandwidth allows several rays to be resolved, thus creating a diversity gain (frequency diversity).

RAM: Random Access Memory. When an application is run it is called from the permanent storage area such as hard drive, floppy disk, or CDROM, and moved into the RAM where, it sends requests to the CPU. Using faster memory can speed up information process time

Ram car or shuttle ram: is a rubber-tired haulage vehicle that is unloaded through the use of a movable steel plate located at the back of the haulage bed.

RAM neuron : RAM neuron a random access memory with n inputs and a single output. The inputs define 2^n addresses and presentation of a particular input vector allows the contents of the 1-bit register at that address to be read, or to be written into. Training consists of writing 1s or 0s into the 1-bit registers, as

Ram, random access memory.: A storage device into which data can be entered (written) and read; usually (but not always) a volatile semiconductor memory.

RAM, Random access memory: . A memory in which the access time is the same for all locations.

RAMA : RAMA See resource auction multiple access.

Raman echo : Raman echo a type of photon echo in which the stimulated emission is assisted by a Raman transition.

Raman laser : Raman laser laser in which the amplification mechanism is considered to be Raman scattering.

Raman scatter : Raman scatter frequency-shifted light scatter, utilized as powerful analytical chemistry technique.

Raman scattering : Raman scattering scattering of light by means of its interactions with the vibrational response of a molecular system. The scattered light is typically shifted to lower frequencies (See Stokes Law); the frequency shift is equal to the vibrational frequency of the molecule, typically 10¹³ to 10¹⁴ Hz. In spontaneous Raman scattering (See spontaneous light scattering), the scattered light is emitted in nearly all directions. In stimulated Raman scattering (See stimulated light scattering), the scattered light is emitted in the form of an intense beam. The emitted beam tends to be intense because it experiences large amplification by an amount given by $egIL$, where g is the gain factor of stimulated Raman scattering, I is the intensity of the incident laser beam in units of power per unit area, and L is the length of the interaction region.

Raman, Sir Chandrasekhara Venkata : Raman, Sir Chandrasekhara Venkata (1888–1970) author of 500 articles and independent investigator of light scatter and acoustics. Winner of a Nobel Prize for the discovery of Raman scattering.

Raman–Nath diffraction : Raman–Nath diffraction in acousto-optics, the regime where many diffraction orders exist due to the thinness of the acoustic grating relative to the acoustic wavelength in the direction of light.

Raman–Nath diffraction regime : Raman–Nath diffraction regime regime where the acoustic beam width is sufficiently narrow to produce many diffracted beams with significant power.

Raman–Nath mode acousto-optic spectrum analyzer : Raman–Nath mode acousto-optic spectrum analyzer similar to the acousto-optic (AO) Bragg-mode spectrum analyzer, but uses illumination at normal incidence to the face of the AO cell that results in multiple diffracted orders, with the two first order beams being used at the Fourier plane to obtain the input RF signal spectrum.

Raman–Nath scattering : Raman–Nath scattering the scattering of light from a periodically varying refractive index variation in a thin medium, as contrasted with Bragg scattering, for instance in the operation of an acousto-optic modulator.

Ramming: Packing sand in a mold by raising and dropping the sand, pattern, flask on a table. Jolt squeezers, jarring machines, and jolt rammers are machines using this principle.

Ramp: The rate of change of a specific output, such as the ramp of a pressure compensator.

ramp : ramp a linear function of grey level, usually connecting two contrasting regions. Named after its appearance in one dimension, it is often used as one model of an edge.

Ramp Module: An electronic device that controls the rate of rise of a servo or proportional valve by using capacitors to limit the rate of voltage or current change to the servo or proportional valve.

ram's head : ram's head the top of a transmission line tower

Ramsey fringe : Ramsey fringe the spectral feature generated when a quantum mechanical transition is excited by two identical-frequency, time-separated electromagnetic pulses.

Ramsey fringes are used in cesium atomic beam clocks.

random access : random access (1) term describing a type of memory in which the access time to any cell is uniform.(2) a method for allowing multiple users to access a shared channel in which transmissions are not coordinated (or perhaps are partially coordinated) in time or frequency.

random access device : random access device See random access.

random access memory (RAM) : random access memory (RAM) direct-access read/write storage in which each addressable unit has a unique hardwired addressing mechanism. The time to access a randomly selected location is constant and not dependent on its position or on any previous accesses. The RAM has a set of k address lines ($m \geq 2k$), n bidirectional data lines, and a set of additional lines to control the direction of the access (read or write), operation and timing of the device. RAM is commonly used for the main memory of a computer and is said to be static if power has to be constantly maintained in order to store data and dynamic if periodic absences of power do not cause a loss of data. RAM is usually volatile. See also static random access memory, dynamic random access memory, nonvolatile random-access memory.

random behavior : random behavior response without a spectral or amplitude pattern or relationship to the excitation. The excitation may be internal, and may be thermal in nature.

random coding : random coding coding technique in which codewords are chosen at random according to some distribution on the codeword symbols. Commonly a tool used in the development of information theoretic expressions.

Random drop. : In electronic warfare. Non-uniformity of interval between drops in window dispensing.

random logic : random logic a digital system constructed with logic gates and flip-flops and other basic logic components interconnected in a non-specific manner. See also microprogramming.

random replacement algorithm : random replacement algorithm in a cache or a paging system, an algorithm that chooses the line or page in a random manner. A pseudo-random number generators may be used to make the selection, or other approximate method. The algorithm is not very commonly used, though it was used in the translation buffers of the VAX11/780 and the Intel i860 RISC processor.

random signal : random signal a signal $X(t)$ that is either noise $N(t)$, an interfering signal $s(t)$, or a sum of these:

random testing : random testing the process of testing using a set of pseudo-randomly generated patterns.

random variable : random variable a continuous or discrete valued variable that maps the set of all outcomes of an experiment into the real line (or complex plane). Because the outcomes of an experiment are inherently random, the final value of the variable cannot be predetermined.

random vector : random vector a vector (typically a column vector) of random variables. See also random variable, random process.

Random-access memory (RAM): A read/write memory that allows data storage (Write) and data retrieval (Read) to any location in any order. Considered to be temporary (volatile) in that the contents are lost if power is turned off.

randomized decision rule : randomized decision rule a hypothesis decision/classification rule that is not deterministic (that is, the measurement or observation does not uniquely determine the decision). Although typically not useful given continuous observations, a randomized rule

Range: An area between two limits within which a quantity is measured, stated in terms of a lower and upper limits.

Range: Nominal operating limits, specified by the lowest calibration point to the highest calibration point.

range filter : range filter an edge detection filter that finds edges by taking the difference between the maximum and minimum values in a local region of the image. The range filter also accepts a weight mask the size of the local image region that controls pixel values before they enter the minimum and maximum

range image: range image an image in which the intensity of point x is a function of the distance between x and the corresponding point in the scene (object) projected on the image plane.

range of Jacobian r : range of Jacobian denoted J , it is defined as a subspace $R.J / \text{in } R^r$ of the end-effector-velocities that can be generated by the joint velocities, in the given manipulator posture. See full rank Jacobian.

Range top: The range burners or stove top and the oven are considered two separate appliances. Counted also with range tops are stand-alone "cook tops."

rank filter: rank filter an image transform used in mathematical morphology. Assume that to every pixel p one associates a window $W(p)$ containing it. Let k be an integer > 1 which is less than or equal to the size of each window $W(p)$. The rank filter with rank k and windows $W(p)$ transforms an image I into a filtered image I_0 whose gray-level $I_0(p)$ at pixel p is defined as the k -th least value among all initial gray-levels $I(q)$ for q in the window $W(p)$. In a dual version, the k -th greatest value is selected. When each $W(p)$ is the translate by p of a structuring element W of size n , three particular cases are noteworthy:

Rankine cycle: The thermodynamic cycle that is an ideal standard for comparing performance of heat-engines, steam power plants, steam turbines, and heat pump systems that use a condensable vapor as the working fluid. Efficiency is measured as work done divided by sensible heat supplied.

Rankine cycle engine: The Rankine cycle system uses a liquid that evaporates when heated and expands to produce work, such as turning a turbine, which when connected to a generator, produces electricity. The exhaust vapor expelled from the turbine condenses and the liquid is pumped back to the boiler to repeat the cycle. The working fluid most commonly used is water, though other liquids can also be used. Rankine cycle design is used by most commercial electric power plants. The traditional steam locomotive is also a common form of the Rankine cycle engine. The Rankine engine itself can be either a piston engine or a turbine.

rankine : oscale of temperature It is the absolute Fahrenheit scale, starting from absolute zero at $- 459.69$ oF. Can be converted to degree Fahrenheit by the addition of 459.69 oF.

Rapid Prototype Machining: Rapid prototype machining is the process of using computer aided design (CAD) models and fast machining techniques to quickly fabricate a component. Traditionally, rapid prototype machining has been accomplished with additive methods, in which the product is divided into a large number of thin slices in the CAD model and the part is fabricated by depositing material in each thin layer. Stereolithography and 3D printing are two common forms of additive manufacturing. With advances in technology, rapid prototype machining is now being accomplished by highly accurate CNC systems that deliver production quality components.

Rapid Traverse: A lever controlled, power operated feature of some machines that permits

the rapid movement of the worktable from one position to another.

Rapping: Knocking or jarring the pattern to loosen it from the sand in the mold before withdrawing the pattern.

RAR: See Reasonable Assured Resources.

Rare Earth (Re): Any of a group of 15 similar metals with atomic numbers 57 to 71. Also rare earth element, rare earth metal, lanthanide series, uncommon metals, Mischmetal.

rare gas: rare gas one of the rare gases specified in the periodic table, He, Ne, Ar, Kr, Xe.

rare gas halides : rare gas halides excimer molecule formed by a reaction of a rare gas atom and a halogen atom: e.g., XeF, ArF, KrF.

rare gas molecule: rare gas molecule excimer molecule formed by a reaction of an excited and a neutral rare gas atom, usually with a third atom present. For example, Ar₂, Kr₂.

rare gas oxides : rare gas oxides an excimer molecule formed by the reaction of a rare gas atom and an oxygen atom.

Rare Gases: Helium, argon, neon, krypton, xenon and radon.

rare-earth magnet : rare-earth magnet a magnet that has any of the rare-earth elements in its composition. Typically stronger than other magnet materials, these include neodymium iron boron and samarium cobalt.

rare-earth permanent magnet : rare-earth permanent magnet magnet made of compounds of iron, nickel, and cobalt with one or more of the rare-earth elements such as samarium. These materials combine the high residual flux density of the alnico-type materials with greater coercivity than ferrites.

raster : raster a predetermined pattern of scanning lines used to provide uniform coverage of the area used for displaying a television picture.

raster coordinates : raster coordinates coordinates in a display system that specifically identify a physical location on the display surface.

raster graphics : raster graphics a computer graphics system that scans and displays an image periodically in a raster, or left-to-right, top-to-bottom fashion.

Raster To Vector Conversion: A raster object is a graphic comprised of an array of pixels, or colored grid, with each element assigned a color. Raster objects are often referred to as bitmaps. The conversion of raster objects to vector objects is also referred to as vectorization and involves the conversion of groups of pixels into points, lines, curves and polygons (filled shapes). Raster to vector conversion is used in the process of scanning and converting blueprints to CAD models.

raster width : raster width (1) physical distance between raster lines on a display surface and between distinguishable points in the same raster line; the two distances are frequently different.(2) the physical distance between raster lines on a display surface and between distinguishable points in the same raster line. The two distances are frequently different.

Rat Tail: An expansion discontinuity in a sand casting, featured as a long, narrow, linear depression, resulting from sand expansion and minor buckling of the mold surface during filling of the mold.

Rate base: The value of property upon which a utility is permitted to earn a specified rate of return as established by a regulatory authority. The rate base generally represents the value of property used by the utility in providing service and may be calculated by any one or a combination of the following accounting methods fair value, prudent investment,

reproduction cost, or original cost. Depending on which method is used, the rate base includes cash, working capital, materials and supplies, deductions for accumulated provisions for depreciation, contributions in aid of construction, customer advances for construction, accumulated deferred income taxes, and accumulated deferred investment tax credits.

Rate base (electric): The value of property, upon which, a utility is permitted to earn a specified rate of return as established by a regulatory authority. See FERC definition.

Rate case: A proceeding, usually before a regulatory commission, involving the rates to be charged for a public utility service.

rate distortion function : rate distortion function the minimum rate at which a source is represented by one of a set of discrete points.

rate distortion theory : rate distortion theory a theory aimed at quantifying the optimum performance of source coding systems. Using information theory, for several source models and distortion measures, rate distortion theory provides the optimum distortion function and the optimum rate function. The distortion function is optimum in that the distortion for a given rate is the theoretical minimum value of distortion for encoding the source at the given or lower rate. The rate function is optimum in that the rate at a given distortion is the minimum possible rate for coding the source at the given or lower distortion.

rate equation approximation : rate equation approximation assumption, in a semiclassical model for the interaction of light with atoms, that all fields and populations change negligibly within the coherence time of the wave functions, loses all information about the phase of the fields and wave functions.

rate equation model : rate equation model model for the interaction of light with atoms in which the atoms are represented only by their populations or population densities and the electro-magnetic field is represented only by its intensity, power, energy, or photon density.

rate equations : rate equations coupled ordinary nonlinear differential equations governing the interaction of an electromagnetic field (represented by an intensity, energy density, or photon density) with an atomic or molecular laser medium (represented by populations of the energy states); phase information relating to the fields and wavefunctions is absent from these equations.

Rate features: Special rate schedules or tariffs offered to customers by electric and/or natural gas utilities.

Rate of return: The ratio of net operating income earned by a utility is calculated as a percentage of its rate base.

Rate of return on rate base: The ratio of net operating income earned by a utility, calculated as a percentage of its rate base.

Rate schedule (electric): The rates, charges, and provisions under which service is supplied to the designated class of customers. See FERC definition.

rate split multiple access : rate split multiple access coding technique for the multiple-access channel in which each user splits their information stream into two or more streams, which are independently encoded. These encoded streams are multiplexed according to some rule prior to transmission. Used to show that time-sharing is not required to achieve certain points in the capacity region of multiple access channels.

rate-adaptive digital subscriber line (RDSL) : rate-adaptive digital subscriber line (RDSL) a digital subscriber line (DSL) in which the rates in each direction are adjusted according to

the quality of the channel. In general, longer loops are associated with lower rates.

rate-compatible punctured convolutional (RCPC) code : rate-compatible punctured convolutional (RCPC) code one of a family of punctured convolutional codes derived from one low-rate convolutional parent code by successively increasing the number of punctured symbols, given that the previously punctured symbols should still be punctured (rate-compatibility). These codes have applications in, for example, variable error protection systems and in hybrid automatic repeat request schemes using additional transmitted redundancy to be able to correctly decode a packet. Also called RCPC code.

Rated Capacity (Battery): The number of AmpHours a battery can deliver under specific conditions (rate of discharge, end voltage, temperature).

Rated Flow: The maximum flow that a manufacturer assigns to a specific component as the maximum desirable flow at which the device will function properly. Also the flow that a designer assigns to a system as the nominal maximum flow.

Rated Lamp Life: With regard to lighting, the point in time when 50% of a statistically significant number of lamps has failed.

Rated Output: The output at standard calibration.

Rated Pressure: The maximum pressure that a manufacturer assigns to a specific component as the maximum desirable pressure at which the device will function properly.

rated voltage: rated voltage the voltage at which a power line or electrical equipment is designed to operate.

rated voltage: The voltage of electrical apparatus at which it is designed to operate.

Rated Voltage: The maximum voltage at which an electric component can operate for extended periods without undue degradation or safety hazard.

Rated Voltage: That maximum voltage at which an electrical component can operate for extended periods without undue degradation of safety hazard.

rate-distortion theory : rate-distortion theory Claude Shannon's theory for source coding with respect to a fidelity criterion, developed during the late 1940s and the 1950s. Can be viewed as a generalization of Shannon's earlier theory (late 1940s) for channel coding and information transmission. The theory applies to the important methods for vector quantization and predicts the theoretically achievable optimum performance.

Ratemaking authority: A utility commission's legal authority to fix, modify, approve, or disapprove rates as determined by the powers given the commission by a State or Federal legislature.

ratepayer : A retail consumer of the electricity distributed by an electric utility. This includes residential, commercial and industrial users of electricity.

Rates: The authorized charges per unit or level of consumption for a specified time period for any of the classes of utility services provided to a customer.

Rating: A manufacturer's guaranteed performance of a machine, transmission line, or other electrical apparatus, based on design features and test data. The rating will specify such limits as load, voltage, temperature, and frequency. The rating is generally printed on a nameplate attached to equipment and is commonly referred to as the nameplate rating or nameplate capacity.

Rating: The nominal value of an energizing quantity that appears in the designation of a relay. The nominal value usually corresponding to the CT and VT secondary ratings.

rating: The rating of an electrical device includes (1) the normal r.m.s. current which it is designed to carry, (2) the normal r.m.s. voltage of the circuit in which it is intended to operate, (3) the normal frequency of the current and the interruption (or withstand) rating of the device.

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Ratio Correction: A feature of digital relays that enables compensation to be carried out for a CT or VT ratio that is not ideal.

ratio detector : ratio detector a circuit for recovering (demodulating) baseband information (usu-ally audio) from a frequency modulated (FM) wave.

Ratio estimate: The ratio of two population aggregates (totals). For example, "average miles traveled per vehicle" is the ratio of total miles driven by all vehicles, over the total number of vehicles, within any subgroup. There are two types of ratio estimates those computed using aggregates for vehicles and those computed using aggregates for households.

rational function : rational function a function that is the ratio of two polynomials. Rational func-tions often arise in the solution of differential equations by Laplace transforms. See also Laplace transform.

Ratoon crop: A crop cultivated from the shoots of a perennial plant.

Raw Coal: Coal that has received no preparation other than possibly screening.

Raw video. : The intelligence of a radar echo before it is quantized and digitized.

Raw Water : Untreated river water.

ray: ray one of a family of lines (rays) used to represent the propagation of an electromagnetic wave; most useful in real media when the wave amplitude varies slowly compared to the wavelength (see geometrical optics).

ray equation : ray equation set of second-order differ-ential equations governing the trajectory of a light ray propagating along an arbitrary path.

ray optics : ray optics approximate representation of electromagnetic wave propagation in terms of light rays, most useful in real media when the wave amplitude varies slowly compared to the wavelength.

ray tracing : ray tracing (1) a high-frequency elec-tromagnetic analysis technique in which the propagation path is modeled by flux lines or "rays." The ray density is proportional to the power density, and frequently, bundles of these rays are called ray tubes.(2) a rendering technique in which the paths of light rays reaching the viewpoint are computed to obtain realistic images. Given a 3-D description of a scene as a collection of surfaces characterized by different optical properties, rays are traced backward from the viewpoint through the image plane until they hit one of the surfaces or go off to infinity

ray transfer matrix : ray transfer matrix real two-by-two ma-trix governing the transformation of the ray displacement and slope with respect to a fixed axis.

Rayleigh criterion : Rayleigh criterion a method of distin-guishing between rough and smooth surfaces in order to determine whether specular re-flection will occur. A surface is consid-ered smooth if the phase difference between waves reflected from the surface is less than ninety degrees.

Rayleigh distribution : Rayleigh distribution the probability dis-tribution of the magnitude of a complex quan-tity whose real and imaginary parts are inde-pendent Gaussian random variables with zero mean. Frequently used to approximate multipath fading statistics in non-line-of-sight mo-bile radio systems.

Rayleigh frequency distribution: A mathematical representation of the frequency or ratio that specific wind speeds occur within a specified time interval.

Rayleigh length : Rayleigh length distance over which the spot size of a Gaussian beam increases from its value at the beam waist to a value 2.5 larger; a measure of the waist size of a Gaus-sian beam, times waist spot size squared divided by wavelength; half of the confocal parameter.

Rayleigh noise : Rayleigh noise the envelope of a zero mean, wide-sense stationary, narrowband Gaussian noise process. The probability den-sity function of a sinusoid in narrowband noise is a generalized Rayleigh distribution,Rician distribution.

Rayleigh scattering : Rayleigh scattering (1) theory for the in-teraction between light and a medium com-posed of particles whose size is much smaller than the wavelength. According to it, the scattering cross section is proportional to the fourth power of the wavelength of the scat-tered light. This explains both the red and blue colors of the sky.(2) an intrinsic effect of glass that con-tributes to attenuation of the guided optical wave. The effect is due to random localized variations in the molecular structure of the glass which acts as scattering centers.

Rayleigh–Ritz procedure : Rayleigh–Ritz procedure a procedure for solving functional equations. See also moment method.

Rayleigh-wing scattering of light : Rayleigh-wing scattering of light the scattering of light with no change in central frequency, and with moderate (of the order of 10¹¹ Hz) broadening of spectrum of the light. Rayleigh-wing scattering occurs when light scatters from anisotropic molecules.

Rb: Chemical symbol for Rubidium

RBOB : Reformulated Gasoline Blendstock for Oxygenate Blending.

RC time constant : RC time constant the time needed for signal traveling from an end to the other end of a wire is constant when the wire and the whole chip is scaled down. As the length of a wire shrinks by a factor of k and the cross-sectional area of the wire is reduced by a factor of k², the capacitance of the wire de-creases by a factor of k while the resistance increases by a factor of k. The RC time re-mains constant, and thus the input charging time remains the same, independent of scal-ing. Consequently, the scaling down of the chip cannot increase the speed of the chip if wire is used. Optical interconnects can speed up the chip.

RCCB: [see residual current circuit breaker]

RCD: Residual Current Device. A protection device which is actuated by the residual current.

RCD: [see residual current device]

RCDD: (Registered Communications Distribution Designer) - Professional certification granted by BICSI.

RCPC code : RCPC code See rate-compatible punctured convolutional code.

Rcs: Abbreviation for Rigid Container Sheet

RD: Rubber-insulated twin conductors, fibrous covered.

Rd, received data.: An rs-232 data signal (received by dte from dce on pin 3).

RDF: See Refuse-Derived Fuel.

RDL: Rubber-insulated twin conductors, lead covered.

RDSL : RDSL See rate-adaptive digital subscriber line.

Re Pickle: Coil that will be reprocessed. Also Reclean, Reroll, and Reanneal.

REA: See Rural Electrification Administration.

reachability: reachability a term that indicates that a dynamical system can be steered from zero initial state to any final state in a given time interval. For many dynamical systems, reachability is equivalent to controllability. This is always true for linear finite-dimensional continuous-time dynamical systems. However, in discrete case, controllability may be the stronger notion than reachability. In this case, the two concepts are equivalent if and only if rank AD^n . For dynamical systems with delays, these two notions are essentially different. For infinite-dimensional systems, the relations between reachability and controllability depend on the properties of the semigroup S_t generated by the operator A .

Reactance: Opposition to current offered by capacitors and inductors in the form of a counter-electromotive force (cemf), but expressed in ohms. Reactance does not consume power but gives the appearance that it does.

Reactance: A phenomenon associated with AC power characterized by the existence of a time difference between voltage and current variations.

Reactance: The opposition of inductance and capacitance to alternating current equal to the product of the sine of the angular phase difference between the current and voltage.

reactance: That part of the impedance that does not consume active power. It is the imaginary part of the impedance.

Reactance: That part of the impedance of an alternating current circuit which is due to capacitance or inductance.

reactance grounded : reactance grounded an electrical system in which the neutral is intentionally grounded through a reactance. Frequently used in the neutral of generators and transformers to limit the magnitude of line to ground fault currents.

reactance modulator : reactance modulator modulator normally using phase or frequency modulation where the reactance of the circuit is dependent on changes in the input modulating voltage.

reaction : reaction a functional in electromagnetics that relates a set of fields and sources to one another. Reaction concepts are often used in the discussion of field reciprocity.

reaction range : reaction range sum of end-to-end round-trip delay and processing time.

reactive compensation : reactive compensation process of counteracting the reactive component of a device by means of capacitors and inductors. Both series and shunt compensation are prevalent.

reactive congestion control : reactive congestion control in packet networks, a congestion control system whose actions are based on actual congestion occurrence.

Reactive Factor: The ratio of the reactive volt-amperes to the apparent power.

reactive ion etching : reactive ion etching the process of etching materials by the use of chemically reactive ions or atoms. Typically, the reactive ions or atoms are generated in a RF plasma environment or in a microwave discharge.

reactive near field : reactive near field the region close to an antenna where the reactive components of the electromagnetic fields from charges on the antenna structure are very large compared to the radiating fields. Considered negligible at distances greater than a

wavelength from the source (decay as the square or cube of distance). Reactive field is important at antenna edges and for electrically small antennas.

Reactive or Quadrature Component: That component of the current which is quadrature, or 90 degrees out of phase, with the voltage across the circuit.

Reactive power: The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive power must be supplied to most types of magnetic equipment, such as motors and transformers. Reactive power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is a derived value equal to the vector difference between the apparent power and the real power. It is usually expressed as kilovolt-amperes reactive (KVAR) or megavolt-ampere reactive (MVAR). See Apparent Power, Power, Real Power.

Reactive Power: A component of apparent power (voltamps) which does not produce any real power (watts). It is measured in VARs voltamps reactive.

reactive power : reactive power (1) electrical energy per unit time that is alternately stored, then re-released. For example, reactive power is associated with a capacitor charging and discharging as it operates on an AC system. Symbolized by Q, with units of volt-amperes reactive (VAR), it is the imaginary part of the complex power.(2) the power consumed by the reactive part of the load impedance, calculated by multiplying the line current by the voltage across the reactive portion of the load. The units are vars (volt-ampere reactive) or kilo-vars.

reactive power : That component of complex power which corresponds to storage and retrieval of energy rather than consumption.

Reactive Volt Amperes: The product of the voltage, current and the sine of the phase difference between them. Expressed in vars.

reactor : reactor a container where the nuclear reaction takes place. The reactor converts the nuclear energy to heat.

reactor containment : reactor containment See containment building.

reactor core: reactor core an array of nuclear fuel rods that are arranged so as to encourage a chain reaction and thus heat water to supply a power for the steam turbine in a nuclear power plant.

Reactor pressure vessel: The main steel vessel containing the reactor fuel, moderator and coolant under pressure.

reactor refueling : reactor refueling the process of shutting down a nuclear reactor for maintenance and fuel replacement, typically every 12 to 24 months.

read: The process of retrieving information from a memory.

read ahead : read ahead on a magnetic disk, reading more data than is nominally required, in the hope that the extra data will also be useful.

read instruction : read instruction an assembly language instruction that reads data from memory or the input/output system.

Read only memory (ROM): A classification of non-volatile memory that has its contents built in at time of manufacturer and which cannot be changed and cannot be lost if power is turned off. Variations include Programmable (PROM) and Erasable Programmable (EPROM) which has provisions for user programming.

read phase : read phase the first portion of a transaction during which the executing process

obtains information that will determine the outcome of the transaction. Any transaction can be structured so that all of the input information is obtained at the outset, all the computation is then performed, and finally all results are stored (pending functionality checks based on the locking protocols in use).

read/modify/write: read/modify/write an uninterruptible memory transaction in which information is obtained, modified, and replaced, under the assurance that no other process could have accessed that information during the transaction. This type of transaction is important for efficient implementations of locking protocols.

read/write head: read/write head conducting coil that forms an electromagnet, used to record on and later retrieve data from a magnetic circular platter constructed of metal, plastic, or glass coated with a magnetizable material. During the read or write operation, the head is stationary while the platter rotates beneath it. The write mechanism is based on the magnetic field produced by electricity flowing through the coil. The read mechanism is based on the electric current in the coil produced by a magnetic field moving relative to it.

Readability. : The ability to be understood, i.e. The readability of signals sent by any means of communications.

re-addressal of messages.: A method whereby the originator or the original addressees may add new addressees, without change in the address or text, to previously transmitted messages.

Reading: The expected output at a given input value.

Readings: Readings taken from instruments and written on log sheet.

read-mostly memory : read-mostly memory memory primarily designed for read operations, but whose contents also can be changed through procedures more complex and typically slower than the read operations. EPROM, EEPROM, and flash memory are examples.

read-only (ROM) memory : read-only (ROM) memory semiconductor memory unit that performs only the read operation; it does not have the write capability. The contents of each memory location is fixed during the hardware production of the device and cannot be altered. A ROM has a set of k input address lines (that determine the number of addressable positions 2^k) and a set of n output data lines (that determine the width in bits of the information stored in each position). An integrated circuit ROM may also have one or more enable lines for interconnecting several circuits and make a ROM with larger capacity. Plain ROM does not allow erasure, but programmable ROM (PROM) does. Static ROM does not require a clock for proper operation, whereas dynamic ROM does. See also random access memory, programmable read-only memory.

real address : real address the actual address that refers to a location of main memory, as opposed to a virtual address that must first be translated. Also called a physical address. See also memory mapping, virtual memory.

Real dollars: These are dollars that have been adjusted for inflation.

Real Power: The component of electric power that performs work, typically measured in kilowatts (kW) or megawatts (MW)--sometimes referred to as Active Power. The terms "real" or "active" are often used to modify the base term "power" to differentiate it from Reactive Power and Apparent Power. See Apparent Power, Power, Reactive Power.

Real Power: The average value of the instantaneous product of volts and amps over a fixed period of time in an AC circuit.

real power : real power consider an AC source connected at a pair of terminals to an otherwise isolated network. The real power, equal to the average power, is the power dissipated by the source in the network.

Real price: A price that has been adjusted to remove the effect of changes in the purchasing power of the dollar. Real prices, which are expressed in constant dollars, usually reflect buying power relative to a base year.

Real time. : The absence of significant time delay in the acquisition, transmission and reception of information.

realization : real-time refers to systems whose correctness depends not only on outputs, but the timeliness of those outputs. Failure to meet one or more of the deadlines can result in system failure. See also soft real-time system, firm real-time system , hard real-time system.

realization : realization for a linear continuous or discrete stationary finite-dimensional dynamical system, a set of four constant matrices A; B; C; D of the state and output equations. The matrices may be calculated using certain algorithms. The realization is said to be minimal if the dimension n of the square matrix A is minimal.

real-time clock : real-time clock a hardware counter that records the passage of time.

real-time computing : real-time computing support for environments in which response time to an event must occur within a predetermined amount of time. Real-time systems may be categorized into hard, firm, and soft real-time.

real-time pricing : The instantaneous pricing of electricity based on the cost of the electricity available for use at the time the electricity is demanded by the consumer.

Real-time system. : An on-line computer that generates output nearly simultaneously with the corresponding inputs. Often, a computer system whose outputs follow by only a very short delay its inputs. See also transaction processing.

Reaming Line: The process of reaming two or more holes to bring them into very accurate alignment.

Reasonably assured resources (RAR): Uranium that occurs in known mineral deposits of such size, grade, and configuration that it could be recovered within the given production cost ranges, with currently proven mining and processing technology. Estimates of tonnage and grade are based on specific sample data and measurements of the deposits and on knowledge of deposit characteristics. Notecorresponds to DOE's uranium reserves category.

Reasonably assured resources (RAR): The uranium that occurs in known mineral deposits of such size, grade, and configuration that it could be recovered within the given production cost ranges, with currently proven mining and processing technology. Estimates of tonnage and grade are based on specific sample data and measurements of the deposits and on knowledge of deposit characteristics. RAR correspond to DOE's Reserves category.

Rebate program: A utility company-sponsored conservation program whereby the utility company returns a portion of the purchase price cost when a more energy-efficient refrigerator, water heater, air conditioner, or other appliance is purchased.

Rebecca-eureka system. : In aviation, a secondary-radar homing and distance measuring system employing an airborne interrogating installation (rebecca) and a ground responding beacon (eureka).

Reburn: An advanced co-firing technique using natural gas to reduce pollution from electric power plants.

Recalescence: An increase of temperature that occurs while cooling metal through a range of temperatures in which changes in metal occur.

Recarburizing: (1) Increasing the carbon content of molten cast iron or steel by adding carbonaceous material, high carbon pig iron or a high carbon alloy. (2) Carburizing a metal part to return surface carbon lost in processing.

Receipt. : A transmission made by a receiving station to indicate that a message has been satisfactorily received.

Receivables from municipality: All charges by the utility department against the municipality or its other departments that are subject to current settlement.

Received: Gas (and other fuels) physically transferred into the responding company's transportation, storage, and/or distribution facilities.

received signal strength indicator (RSSI) : received signal strength indicator (RSSI) ratio of signal power level for a single frequency or a band of frequencies to an established reference; the reference is typically 1 mW, and the resultant value is expressed in decibels. RSSI is often used in mobile communications to make assessments such as to which base station a call should be connected or which radio channel should be used for communication.

receiver: The part of a communications system which converts electrical waves into visible or audible form.

Receiver: Portion of a photoelectric sensor that contains a photo sensor.

Receiver (radio). : A device connected to an aerial or other source of radio signals in order to make available in some desired form the required information content of the signals.

receiver noise : receiver noise thermal (Boltzmann-type) noise in a receiver, a function of its physical temperature above absolute zero and the noise bandwidth of the receiver's electronic devices. Receiver noise causes finite receiver sensitivity. See also thermal noise.

receiver operating characteristics curve : receiver operating characteristics curve plot of the probability of detection (likelihood of detecting the object when the object is present) versus the probability of false alarm (likelihood of detecting the object when the object is not present) for a particular processing system.

receiver sensitivity : receiver sensitivity the minimum radio signal power at the input to a receiver that results in signal reception of some stated quality.

Receiving Ladle: A ladle placed in front of the cupola into which all metal is tapped. It acts as a mixer and reservoir and to smooth out metal flow to the pouring area.

Receptacle: A contact device which is intended to establish electrical connection with an inserted plug.

Reception. : Listening to, copying, recording or viewing any form of emission.

Recess: An internal groove.

Reciprocation: Back and forth straight line motion or oscillation.

reciprocity : reciprocity (1) a consequence of Maxwell's equations, stipulating the phenomenon that the reaction of the sources of each of two different source distributions with the fields generated by the other are equal, provided the media involved have certain permeability and permittivity properties (reciprocal media). Referring to reciprocal circuits, reciprocity states that the positions of an ideal voltage source (zero internal impedance) and an ideal ammeter (infinite internal impedance) can be interchanged without affecting their readings.(2) in antenna theory, the principle that the receive and transmit patterns of an

antenna are the same.

reciprocity in scattering : reciprocity in scattering law according to which the source and detector points can be exchanged, providing the source amplitude and phase are preserved.

reciprocity theorem : reciprocity theorem in a network consisting of linear, passive impedances, the ratio of the voltage introduced into any branch to the current in any other branch is equal in magnitude and phase to the ratio that results if the positions of the voltage and current are interchanged.

Recirculating Line: Line that relieves the pressure between the feedwater pump and the deaerator tank.

Recirculating Water: Keeps water from dead heading in feed water pumps.

Reclamation: Process of restoring surface environment to acceptable pre-existing conditions. Includes surface contouring, equipment removal, well plugging, revegetation, etc.

Reclamation expenses: In the context of the coal operation statement of income, refers to all payments made by the company attributable to reclamation, including taxes.

Recloser: A switching device that rapidly recloses a power switch after it has been opened by an overload. In reclosing the power feed to the line, the device tests the circuit to determine if the problem is still there. If not, power is not unnecessarily interrupted.

recloser : recloser a self-contained device placed on distribution lines that senses line currents and opens on overcurrent. Reclosing is employed to reenergize the protected line segment in the case of temporary faults. Reclosers have the capability for fast tripping for fuse saving, and slow tripping to allow sectionalizing fuse operation for faults on laterals. The recloser will retrip on permanent faults and go on to lockout. Reclosers are suitable for pole mounting on overhead lines.

reclosing relay : reclosing relay an auxiliary relay that initiates circuit breaker closing in a set sequence following fault clearing. Reclosing relays are typically employed on overhead lines where a high proportion of the faults are temporary.

Recognition and identification, electronic. : The determination by electronic means of the friendly or enemy character or of the individuality of another and the identification of electronic means of your own friendly character or own individuality. See also radar recognition and identification (iff - identification friend or foe).

Recognition. : The determination by any means of the friendly or enemy character or of the individuality of another, or of objects such as aircraft, ships, or tanks or of phenomena such as communications-electronics patterns.

recoil permeability : recoil permeability the average slope of the minor hysteresis loop, which is roughly the slope of the major hysteresis loop at zero applied field (H), and is most often used to determine the effect of applying and removing a demagnetizing field to and from a magnetic material.

Recombination: The action of a free electron falling back into a hole. Recombination processes are either radiative, where the energy of recombination results in the emission of a photon, or non-radiative, where the energy of recombination is given to a second electron which then relaxes back to its original energy by emitting phonons. Recombination can take place in the bulk of the semiconductor, at the surfaces, in the junction region, at defects, or between interfaces.

recombination : recombination the process in which an electron neutralizes a hole.

Sometimes this process causes light emission (i.e., through radiative recombination), and sometimes it doesn't (i.e., through nonradiative recombination).

Recombination (Battery): State in which the hydrogen and oxygen gasses normally formed within the battery cell during charging are recombined to form water.

recombination X-ray laser : recombination X-ray laser an X-ray laser made by gain from an inverted population where the upper level is inverted due to recombining ions and electrons.

reconstruction: reconstruction the process of forming a 3-D image from a set of 2-D projection images. Also applies to the formation of a 2-D image from 1-D projections. See image reconstruction, tomography and computed tomography.

reconstruction from marker : reconstruction from marker in a binary image, this is the operation extracting all connected components having a non-empty intersection with a marker. This operation can be generalized to gray-level images by a morphological operator applying such a reconstruction on the gray-level slices of the image.

record : record unit of data, corresponding to a block, sector, etc., on a magnetic disk, magnetic tape, or other similar I/O medium.

recording code : recording code a line code optimized for recording systems. See also line code.

recording density : recording density number of bits stored per linear inch on a disk track. In general, the same number of bits are stored on each track, so that the density increases as one moves from the outermost to the innermost track.

Recoverability: In reference to accessible coal resources, the condition of being physically, technologically, and economically minable. Recovery rates and recovery factors may be determined or estimated for coal resources without certain knowledge of their economic minability; therefore, the availability of recovery rates or factors does not predict recoverability.

Recoverable coal: Coal that is, or can be, extracted from a coal bed during mining.

Recoverable proved reserves: The proved reserves of natural gas as of December 31 of any given year are the estimated quantities of natural gas which geological and engineering data demonstrates with reasonable certainty to be recoverable in the future from known natural oil and gas reservoirs under existing economic and operating conditions.

Recoverable Resources of Coal: The sum of measured resources plus indicated resources.

recovered energy : Reused heat or energy that otherwise would be lost.

recovery : recovery action that restores the state of a process to an earlier configuration after it has been determined that the system has entered a state which does not correspond to functional behavior. For overall functional behavior, the states of all processes should be restored in a manner consistent with each other, and with the conditions within communication links or message channels.

Recovery factor (coal): The percentage of total tons of coal estimated to be recoverable from a given area in relation to the total tonnage estimated to be in the demonstrated reserve base. The estimated recovery factors for the demonstrated reserve base generally are 50 percent for underground mining methods and 80 percent for surface mining methods. More precise recovery factors can be computed by determining the total coal in place and the total recoverable in any specific locale.

Recovery percentage (coal): The percentage of coal that can be recovered from the coal

deposits at existing mines.

Recovery time. : The time for a part of a receiver to recover to a zero signal condition after receiving an input signal (e.g. Jamming pulse) of saturation intensity.

Recovery. : Recovery is the act of restoring the system to the last known secure state and addressing the vulnerability to prevent the same intrusion from recurring.

Recrystallization: A process whereby a distorted grain structure of cold worked metals is replaced by a new, stress free grain structure as a result of annealing above a specific minimum temperature for a specific time.

RECS: See Residential Energy Consumption Survey.

rectangle detection : rectangle detection the detection of rect-angle shapes, often by searching for cor-ner signals, or from straight edges present in an image. Rectangle detection is impor-tant when locating machined parts in images, e.g., prior to robot assembly tasks. See also polygon detectionand square detection.

rectangular cavity : rectangular cavity a section of rectangu-lar waveguide closed on both ends by con-ducting plates.

rectangular window : rectangular window (1) in finite impulse response (FIR) filter design, the rectangu-lar window constituting the most straightfor-ward window function used usually as a ref-erence in studying other window functions. It is defined as 1 within an even interval cen-tered at the origin and 0 elsewhere.(2) in image processing, an rectangular area centered at a pixel under consideration.

rectification: The conversion of ac to pulsating dc.

Rectifier: A device for converting alternating current to direct current.

rectifier: A device which converts ac to pulsating dc.

rectifier : rectifier a circuit that changes an AC volt-age to DC. Switching elements or diodes are used to create the DC voltage. Diode recti-fiers and thyristor rectifiers are the two most commonly used rectifiers.

rectifier type meter: A moving coil meter used together with a bridge rectifier to measure the average value of the waveform. They are usually calibrated to read the rms value of a sinusoidal waveform by multiplication by the form factor 1.1107 during calibration.

Rectifier : A solid state device that converts alternating current to pulsed direct current.

Rectifiers: A rectifier is a device used to convert alternating current to direct current.

recursive filter : recursive filter a digital filter that is re-cursively implemented. That is, the present output sample is a linear combination of the present and past input samples as well as the previously determined outputs. Tradition-ally, the term recursive filter is closely related to infinite impulse filter. In a nonrecursive filter the present output sample is only a lin-ear combination of the present and past input samples.

recursive function : recursive function See recursive procedure.

recursive method : recursive method method that estimates local displacements iteratively based on pre-vious estimates. Iterations are performed at all levels, as in every pixel, each block of pix-els, along scanning line, from line to line, or from frame to frame.

recursive procedure : recursive procedure a procedure that can be called by itself or by another program that it has called; effectively, a single process can have several executions of the same program alive at the same time. Recursion provides one means of defining functions.

recursive self-generating neural network (RSGNN) : recursive self-generating neural network (RSGNN) a recursive version of self-generating neural network (SGNN) that can discover recursive relations in the training data. It can be used in applications such as natural language learning/understanding, continuous spoken language understanding, and DNA clustering/classification, etc. See also self-generating neural network.

Recycle mark: A design of three arrows that make up a circle. This mark tells you that you can recycle the product. It can also mean that the material is made from recycled materials.

Recycled feeds: Feeds that are continuously fed back for additional processing.

Recycling: The process of converting materials that are no longer useful as designed or intended into a new product.

Recycling: A way to reuse materials instead of just throwing them away.

Red book red head : Red book See IEEE Color Books. red head another name for a hot tap.

Red Brass: 85% Copper A copper zinc alloy containing approximately 15% zinc, used for plumbing pipe, hardware, condenser tubes. Because of its color, is used for vanity cases, coins, plaques, badges, etc. It is somewhat stronger than commercial bronze and is hardened more rapidly by cold working.

Red Rust: A reddish brittle coating of iron oxide which develops on an uncoated or coated steel surface when oxygen in the atmosphere mixes with iron.

Red Shorness: Brittleness in steel when it is red hot.

Redox potential: A measurement of the state of oxidation of a system.

Redraw: The consecutive drawing of wire through a series of dies to each a desired wire size.

Redraw Rod: This term is not recommended. The term "Drawing Stock" is preferred.

Redrill footage: Occasionally, a hole is lost or junked and a second hole may be drilled from the surface in close proximity to the first. Footage drilled for the second hole is defined as "redrill footage." Under these circumstances, the first hole is reported as a dry hole (explanatory or developmental) and the total footage is reported as dry hole footage. The second hole is reported as an oil well, gas well, or dry hole according to the result. The redrill footage is included in the appropriate classification of total footage, but is not reported as a separate classification.

reduced characteristic table : reduced characteristic table a tabular representation used to illustrate the operation of various bistable devices.

reduced instruction set computer (RISC) processor : reduced instruction set computer (RISC) processor relatively simple control unit design with a reduced menu of instructions (selected to be simple), data and instructions formats, addressing modes, and with a uniform streamlined handling of pipelines. One of the particular features of a RISC processor is the restriction that all memory accesses should be by load and store instructions only (the so called load/store architecture). All operations in a RISC are register-to-register, meaning that both the sources and destinations of all operations are CPU registers. All this tends to significantly reduce CPU to memory data traffic, thus improving performance. In addition, RISCs usually have the following properties: most instructions execute within a single cycle, all instructions have the same standard size (32 bits), the control unit is hardwired (to increase speed of operations), and there is a CPU register file of considerable size (32 registers in most systems, with the exception of SPARC with 136 and AMD 29000 with 192

registers).Historically, the earliest computers explicitly designed by these rules were designs by Seymour Cray at CDC in the 1960s. The earliest development of the RISC philosophy of design was given by John Cocke in the late 1970s at IBM. However, the term RISC was first coined by Patterson et al. at the University of California at Berkeley to describe a computer with an instruction set designed for maximum execution speed on a particular class of computer programs. Patterson and his team of researchers developed the first single-chip RISC processor.

reduced low voltage system : A system in which the nominal phase to phase voltage does not exceed 110 volts and the nominal phase to earth voltage does not exceed 63.5 volts.

Reduced use-off hours: A conservation feature consisting of manually or automatically reducing the amount of heating or cooling produced during the hours a building is not in full use.

reduced-order model : reduced-order model a mathematical representation of a system that is obtained by neglecting portions of a more explicit (de-tailed) model. In large-scale power system analysis, this term is typically used to indicate a model derived by neglecting the electric transients in the stator voltage equations of all machines and in the voltage equations of power system components connected to the stators of the machines.

reduced-voltage motor starter : reduced-voltage motor starter a device designed to safely connect an electric motor to the power source while limiting the magnitude of its starting current. Various electromechanical configurations may be used: primary resistor, delta-wye, part-winding (requires special motor or dual voltage windings). Power electronic devices may also be utilized to gradually increase the applied voltage to system levels. The complete starter must also include fault and overload protection.

Reducing Agent: Either natural gas or coal can be used to remove the oxygen from iron ore in order to produce a scrap substitute. In gas based processes, the iron ore is heated in a vessel as reformed natural gas passes through. In coal based processes, iron ore is combined with gasified or ground coal and heated. The oxygen in the ore combines with carbon and hydrogen in the gas or coal, producing reduced, or metallic, iron.

Reducing Station: Manifolds on both the A.G.C. system and the C.V.C. system that break down the pressure coming from the main pumps into the pressures that the system requires. In the A.G.C. system the reducing station splits the pump pressure into P1, P2 and P3 pressures. In the C.V.C. system, the reducing station splits the pump pressure into P1, P2, P3 and P4 pressures.

Reducing Valve: A valve that decreases the downstream pressure (at the valve outlet) in order to control the flow and therefore the outlet pressure to some preset level. Normally accomplished by balancing the outlet pressure against a precision spring.

Reduction : The removal of oxygen or addition of hydrogen.

Reduction Of Area: (1) Commonly, the difference, expressed as a percentage of original area, between the original cross sectional area of a tensile test specimen and the minimum cross sectional area measured after complete separation. (2) The difference, expressed as a percentage of original area, between original cross sectional area and that after straining the specimen.

redundancy: Duplication of elements in a system or installation to enhance the reliability or continuity of operation.

redundancy : redundancy (1) the use of parallel or series components in a system to reduce the possibility of failure. Similarly, referring to an increase in the number of components which can interchangeably perform the same function in a system. Sometimes it is referred to as hardware redundancy in the literature to differentiate from so called analytical redundancy in the field of FDI (fault detection and isolation/identification). Redundancy can increase the system reliability.(2) in robotics, the number n degrees of mobility of the mechanical structure, the number m of operational space variables, and the number r of the operational space variables necessary to specify a given task. Consider the differential kinematics mapping $v = D J \cdot \dot{q}/\dot{q}_P$ in which v is $r \times 1$ vector of end-effector velocity of concern for the specific tasks and J is $r \times n$ Jacobian matrix. If $r < n$, the manipulator is kinematically redundant and has $n-r$ redundant degrees of mobility. Manipulator can be redundant with respect to a task and nonredundant with respect to another. See also redundant manipulator.

redundancy encoding : redundancy encoding any digital encoding scheme which takes advantage of redundancy in the digital signal. For example, in run-length encoding, a gray scale digital image is represented by the gray level of a pixel and the number of times adjacent pixels with that gray level appear. So an image containing large regions of a single gray level can be represented with a great reduction in digital information.

redundancy statistics model : redundancy statistics model refers to statistical similarities such as correlation and predictability of data. Statistical redundancy can be removed without destroying any information.

Redundancy. : Equipment or facilities provided in numbers greater than the essential minimum, to increase overall reliability.

redundancy-free channel coding : redundancy-free channel coding refers to methods for channel robust source coding where no “explicit” error protection is introduced. Instead, knowledge of the source and source code structure is utilized to counteract transmission errors (for example, by means of an efficient index assignment).

redundant array of inexpensive disks (RAID) 0 : redundant array of inexpensive disks (RAID) standardized scheme for multiple-disk data base systems viewed by the operating system as a single logical drive. Data is distributed across the physical drives allowing simultaneous access to data from multiple drives, thereby reducing the gap between processor speeds and relatively slow electromechanical disks. Redundant disk capacity can also be used to store additional information to guarantee data recoverability in case of disk failure (such as parity or data duplication). The RAID scheme consists of six levels (0 through 5), RAID0 being the only one that does not include redundancy.

redundant manipulator : redundant manipulator the manipulator is called redundant if more degrees of mobility are available than degrees of freedom required for the execution of a given task. See also differential kinematics, redundancy.

redundant number system : redundant number system the system in which the numerical value could be represented by more than one bit string.

Reed switch : Reed switch a magnetomechanical device composed of two thin slats of ferromagnetic material within a hermetically sealed capsule that attract each other when an external magnetic field (from an electromagnet or permanent magnet) induces opposite poles at the overlapping ends of both slats.

Reed–Solomon code : Reed–Solomon code an extension of BCH codes to nonbinary

alphabets developed by Driving Reed and Gustave Solomon independently of the work by Bose, Chaudhuri, and Hocquenghem. Arguably, the most widely used of any forward error control code.

Reel: A cylinder device used to hold wire and cable until installed. There are standard reel sizes that are used in the electrical industry that are either wood (nonreturnable) or steel (returnable).

Reel: A revolvable flanged device made of wood and/or metal which is used for winding flexible metal wire or cable.

Reel Breaks: Fractured base metal normally caused by poor leveling. It is indicated by light kinks across the width of the winding coil.

Reel Digs: Especially on high carbon steel, marks made by the Hot Mill reels. These occur because the reels run faster than steel is coming off the line, it actually puts digs in itself.

Reel Kinks: Damage on the strip in the core of a coil.

Re-encrypt. : A process of encrypting again a previously encrypted and transmitted message, any of the plain text thereof, or a paraphrased version.

re-entrancy: re-entrancy term describing the number of times that a multiplex armature winding of a commutated machine closes upon itself via the commutator ring. For example, duplex windings can be either singly or doubly re-entrant. In a doubly re-entrant duplex winding, the ends of the two winding circuits close only on themselves and not on each other, creating two distinct circuits through the commutator and two distinct circuit closures. Conversely, in a singly re-entrant duplex winding, the two windings are connected in series through the commutator ring creating only a single circuit closure.

reentrancy : reentrancy the characteristic of a block of software code that, if present, allows the code in the block to be executed by more than one process at a time.

reentrant : reentrant a program that uses concurrently exactly the same executable code in
reference black level : reference black level picture signal level corresponding to a specified maximum limit for black peaks.

reference impedance : reference impedance impedance to which scattering parameters are referenced.

reference matrix : reference matrix a triangular array of bits used to implement the least recently used algorithm in caches. When the i th line is referenced, all the bits in the i th row are set to a 1 and then all the bits in the i th column are set to a 0. Having 0s in the j th row and 1s in the j th column identifies the j th line as the least recently used line.

Reference model. : See OSI reference model.

reference monitor : reference monitor a functional module that checks each attempt to access memory to determine whether it violates the system's security policy, intercepting it if a violation is imminent. The memory management unit can provide this service, provided that the access control information contained there is known to be consistent with the security policy.

Reference month: The calendar month and year to which the reported cost, price, and volume information relates.

reference node : reference node one node in a network that is selected to be a common point, and all other node voltages are measured with respect to that point.

Reference range: A specific range of values of an influence quantity within which the

transducer complies with the requirements concerning intrinsic errors.

Reference value: A specified single value of an influence quantity at which the transducer complies with the requirements concerning intrinsic errors.

reference white : reference white in a color matching process, a white with known characteristics used as a reference. According to the trichromatic theory, it is possible to match an arbitrary color by applying appropriate amounts of three primary colors.

reference white level : reference white level picture signal level corresponding to a specified maximum limit for white peaks.

Reference year: The calendar year to which the reported sales volume information relates.

Reference Conditions: Conditions of use for a transducer prescribed for performance testing, or to ensure valid comparison of results of measurement.

refile. : The processing of a message into appropriate procedure for transfer to another system which involves alteration of the message format, e.g. Message relay to radiotelegraph, point to point telegraph network to message relay network, military to civil/commercial.

Refined Aluminum: Aluminum of very high purity (99.950 percent or higher) obtained by special metallurgical treatments.

Refined coal: A coal product that is created when impurities and/or moisture are removed to improve heat content and reduce emissions. Includes any coal that meets the IRS definition of refined coal (Notice 2010-54 or any superseding IRS notices). Does not include coal processed by coal preparation plants.

Refined petroleum products: Refined petroleum products include but are not limited to gasolines, kerosene, distillates (including No. 2 fuel oil), liquefied petroleum gas, asphalt, lubricating oils, diesel fuels, and residual fuels.

Refiner: A firm or the part of a firm that refines products or blends and substantially changes products, or refines liquid hydrocarbons from oil and gas field gases, or recovers liquefied petroleum gases incident to petroleum refining and sells those products to resellers, retailers, reseller/retailers or ultimate consumers. "Refiner" includes any owner of products that contracts to have those products refined and then sells the refined products to resellers, retailers, or ultimate consumers.

Refiner acquisition cost of crude oil: The cost of crude oil, including transportation and other fees paid by the refiner. The composite cost is the weighted average of domestic and imported crude oil costs. Note The refiner acquisition cost does not include the cost of crude oil purchased for the Strategic Petroleum Reserve (SPR).

Refinery: An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and oxygenates.

Refinery and blender net inputs: Raw materials, unfinished oils, and blending components processed at refineries, or blended at refineries or petroleum storage terminals to produce finished petroleum products. Included are gross inputs of crude oil, natural gas plant liquids, other hydrocarbon raw materials, hydrogen, oxygenates (excluding fuel ethanol), and renewable fuels (including fuel ethanol). Also included are net inputs of unfinished oils, motor gasoline blending components, and aviation gasoline blending components. Net inputs are calculated as gross inputs minus gross production. Negative net inputs indicate gross inputs are less than gross production. Examples of negative net inputs include reformulated gasoline blendstock for oxygenate blending (RBOB) produced at refineries for shipment to

blending terminals, and unfinished oils produced and added to inventory in advance of scheduled maintenance of a refinery crude oil distillation unit.

Refinery and blender net production: Liquefied refinery gases, and finished petroleum products produced at a refinery or petroleum storage terminal blending facility. Net production equals gross production minus gross inputs. Negative net production indicates gross production is less than gross inputs for a finished petroleum product. Examples of negative net production include reclassification of one finished product to another finished product, or reclassification of a finished product to unfinished oils or blending components.

Refinery capacity utilization: Ratio of the total amount of crude oil, unfinished oils, and natural gas plant liquids run through crude oil distillation units to the operable capacity of these units.

Refinery fuel: Crude oil and petroleum products consumed at the refinery for all purposes.

Refinery gas: Still gas consumed as refinery fuel.

Refinery input, crude oil: Total crude oil (domestic plus foreign) input to crude oil distillation units and other refinery processing units (cokers, etc.).

Refinery input, total: The raw materials and intermediate materials processed at refineries to produce finished petroleum products. They include crude oil, products of natural gas processing plants, unfinished oils, other hydrocarbons and oxygenates, motor gasoline and aviation gasoline blending components and finished petroleum products.

Refinery losses and gains: Processing gain and loss that takes place during the refining process itself. Excludes losses that do not take place during the refining process, e.g., spills, fire losses, and contamination during blending, transportation, or storage.

Refinery olefins: Subset of olefinic hydrocarbons (olefins) produced at crude oil refineries, including ethylene, propylene, butylene, and isobutylene.

Refinery output: The total amount of petroleum products produced at a refinery. Includes petroleum consumed by the refinery.

Refinery production: Petroleum products produced at a refinery or blending plant. Published production of these products equals refinery production minus refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount that is reprocessed (input) or reclassified to become another product during the same month. Refinery production of unfinished oils and motor and aviation gasoline blending components appear on a net basis under refinery input.

Refinery utilization rate: Represents the use of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operable refining capacity of the units.

Refinery yield: Refinery yield (expressed as a percentage) represents the percent of finished product produced from input of crude oil and net input of unfinished oils. It is calculated by dividing the sum of crude oil and net unfinished input into the individual net production of finished products. Before calculating the yield for finished motor gasoline, the input of natural gas liquids, other hydrocarbons and oxygenates, and net input of motor gasoline blending components must be subtracted from the net production of finished aviation gasoline.

Refinery-grade butane: A refinery-produced hydrocarbon product that is composed predominantly of normal butane and/or isobutane, and may also contain propane and/or

natural gasoline. This product may also contain significant volumes of olefinic hydrocarbons.

Refining: (a) the removal of impurities and metallic oxides from the molten bath by the reaction of the slag and other additions. (b) A heat treatment process with the object of refining or making the grain size of the steel uniform.

Refining Temperature: A temperature, usually just higher than the transformation range, employed in the heat treatment of steel to refine the structure in particular, the grain size.

reflected power : reflected power power in the reflected part of an electromagnetic wave.

reflected wave : reflected wave the result that ensues when a high-speed electromagnetic wave reaches the end of a transmission line, when the line is not terminated with an impedance match-ing the surge impedance of the line. When a surge reaches an open circuited line terminal, the reflected voltage wave equals the incident voltage wave, resulting in a doubling of the level of the voltage surge at that point.

reflection: reflection in electromagnetic wave propa-gation, the change in direction of propagation of a plane wave due to the wave being inci-dent on the surface of a material. Typically, the effect is greater in the case of a material that has a high electrical conductivity.

reflection: process of sending back that occurs when a surge meets a discontinuity in transmission.

reflection coefficient : reflection coefficient (1) the ratio of the reflected field to the incident field at a mate-rial interface.(2) another way of expressing the impe-dance. The reflection coefficient is defined as how much signal energy would be re-lected at a given frequency. Like impedance, the reflection coefficient will vary with fre-quency if inductors or capacitors are in the circuit. The reflection coefficient is always defined with respect to a reference or charac-teristic impedance ($D .Z - Z0/= .Z C Z0/$). For example, the characteristic impedance of one typical TV transmission line is 75 ohms, whereas another type of TV trans-mission line has a characteristic impedance of 300 ohms. Hooking up a 75-ohm trans-mission line to a 300-ohm transmission line will result in a reflection coefficient of value $.300 - 75/= .300 C 75/ D 0:6$, which means that 60% of the energy received from the an-tenna.

reflection grating : reflection grating a diffraction grating that operates in reflection, i.e., the diffracted light is obtained by reflecting off the grating.

Reflection Loss: That part of a signal which is lost due to reflection of power at a line discontinuity.

Reflective film: Transparent covering for glass that helps keep out heat from the sun.

reflective notching : reflective notching an unwanted notching or feature size change in a photoresist pattern caused by the reflection of light off nearby topographic patterns on the wafer.

Reflectivity: The ratio of the energy carried by a wave after reflection from a surface to its energy before reflection.

reflectivity : reflectivity a property that describes the reflected energy as a function of the incident energy of an EM wave and a material body. The property may be quantified in terms of the magnitude of the reflection coefficient or the ratio of the incident to the reflected field.

Reflector: A device used to redirect the luminous flux from a light source by the process of reflection.

Reflector Sheet: An alclad product containing on one side a surface layer of high purity aluminum superimposed on a core or base alloy of commercial purity aluminum or an

aluminum manganese alloy. The high purity coating imparts good polishing characteristics and the core gives adequate strength and formability.

Reflector, confusion. : A radio wave reflector used for creating echoes for confusion purposes against radars, proximity fuses and guided missiles.

Reflector, corner. : A device, normally consisting of three metallic surfaces or screens perpendicular to one another, designed to act as a radar target or marker.

Reflectoscope: An instrument for the ultrasonic testing of metals.

reflex klystron : reflex klystron a high-power microwave tube oscillator.

Reflow: An area on the plating line where tin on the strip surface is melted and resolidified to get a brite, shiny appearance.

Reflow Plate (Brite): Process on Tin Platers; section of Tin plater that heats coil and melts the Tin coating.

Reflowed Surface: A shiny tin plate product surface which is achieved by heating the tin coating up to its melting point (thereby melting the tin) and cooling it back to room temperature.

Reforestation: Replanting of forests on lands that have recently been harvested or otherwise cleared of trees.

Reformulated blendstock for oxygenate blending (RBOB): Motor gasoline blending components intended for blending with oxygenates to produce finished reformulated gasoline.

Reformulated gasoline: Finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. It includes gasoline produced to meet or exceed emissions performance and benzene content standards of federal-program reformulated gasoline even though the gasoline may not meet all of the composition requirements (e.g. oxygen content) of federal-program reformulated gasoline. Note This category includes Oxygenated Fuels Program Reformulated Gasoline (OPRG). Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) and Gasoline Treated as Blendstock (GTAB).

refraction : refraction the process undertaken by an electromagnetic wave wherein the wave changes direction of propagation as it is incident on the edge of a material. The wave undergoes a “bending” action, sometimes re-ferred to as knife edge refraction, and the “bending” angle is less than 90 degrees. Re-fraction may also occur as a wave propagates through a media such as the atmosphere.

refractive index : refractive index a parameter of a medium equal to the ratio of the velocity of propagation in free space to the velocity of propagation in the medium. It is numerically equal to the square root of the product of the relative

Refractor: A device used to redirect the luminous flux from a light source by the process of refraction.

Refractory Alloy: A term applied to those alloys which due to hardness or abrasiveness present relative difficulty in maintaining close dimensional tolerances.

Refractory Brick: Heat resistant brick. Because its melting point is well above the operating temperatures of the process, refractory bricks line most steelmaking vessels that come in contact with molten metal, like the walls of the blast furnace, sides of the ladles, and inside of the BOF.

Refractory Clay: A clay which fuses at pce 25 (1590C, 2894F) or higher.

Refractory Metal: A metal having an extremely high melting point. In the broad sense, it refers to metals having melting points above the range of iron, cobalt, and nickel.

refresh: The process of renewing the contents of a dynamic memory.

refresh : refresh refers to the requirement that dy-namic RAM chips must have their contents periodically refreshed or restored. Without a periodic refresh, the chip loses its contents. Typical refresh times are in the 5–10 millisecon-d range. See also memory refresh.

refresh cycle: refresh cycle (1) a periodically repeated procedure that reads and then writes back the contents of a dynamic memory device. With-out this procedure, the contents of dynamic memories will eventually vanish.(2) the period of time taken to “refresh” a portion of a dynamic RAM chip's memory. See also refresh.

refresh cycle : permittivity and relative permeability of the medium. See also index of refraction.

refresh period : refresh period the time between the be-ginnings of two consecutive refresh cycles for dynamic random access memory devices.

Refrigeration unit: Lowers the temperature through a mechanical process. In a typical refrigeration unit, electricity powers a motor that runs a pump to compress the refrigerant to maintain proper pressure. (A "refrigerant" is a substance that changes between liquid and gaseous states under desirable temperature and pressure conditions.) Heat from the compressed liquid is removed and discharged from the unit and the refrigerant then evaporates when pressure is reduced. The refrigerant picks up heat as it evaporates and it returns to the compressor to repeat the cycle. A few refrigeration units use gas (either natural gas or LPG) in an absorption process that does not use a compressor. The gas is burned to heat a chemical solution in which the refrigerant has been absorbed. Heating drives off there frigerant which is later condensed. The condensed refrigerant evaporates by a release of pressure, and it picks up heat as it evaporates. The evaporated refrigerant is then absorbed back into the chemical solution, the heat is removed from the solution and discharged as waste heat, and the process repeats itself. By definition, refrigerators, freezers, and air-conditioning equipment all contain refrigeration units.

Refunding: Retirement of one security issue with proceeds received from selling another. Refunding provides for retiring maturing debt by taking advantage of favorable money market conditions.

Refuse bank: A repository for waste material generated by the coal cleaning process.

Refuse mine: A surface mine where coal is recovered from previously mined coal. It may also be known as a silt bank, culm bank, refuse bank, slurry dam, or dredge operation.

Refuse recovery: The recapture of coal from a refuse mine or the coal recaptured by that process. The resulting product has been cleaned to reduce the concentration of noncombustible materials.

Refuse-derived fuel (RDF): A fuel produced by shredding municipal solid waste (MSW). Noncombustible materials such as glass and metals are generally removed prior to making RDF. The residual material is sold as-is or compressed into pellets, bricks, or logs. RDF processing facilities are typically located near a source of MSW, while the RDF combustion facility can be located elsewhere.

regeneration: regeneration the process of returning en-ergy back into a system during a

portion of the machine's operating cycle.

regeneration loop : regeneration loop a water purification system used to maintain proper conditions of the cooling liquid for a power vacuum tube.

regenerative braking : regenerative braking a method for extracting kinetic energy from the load, converting it back to electricity, and returning it to the supply. Used widely in electric train drives and electric vehicles.

Regenerative Circuit: A piping arrangement for a differential type cylinder in which discharge fluid from the rod end combines with pump delivery to be directed into the head end.

region growing : region growing the grouping of pixels or small regions in an image into larger regions. Region growing is one approach to image segmentation. See also dilation, erosion, image segmentation, mathematical morphology.

region of absolute convergence : region of absolute convergence the set of complex numbers s for which the magnitude of the Laplace transform integral is finite. The region can be expressed as $C < \text{Re.}s/ < -$ where C and $-$ denote real parameters that are related to the causal and anticausal components, respectively, of the signal whose Laplace transform is being sought. $\text{Re.}s/$ represents the real part of s .

region of asymptotic stability : region of asymptotic stability See region of attraction.

region of attraction : region of attraction the region around an equilibrium state of a system of differential or difference equations such that the trajectories originating at the points in the region converge to the equilibrium state. Trajectories starting outside the region of attraction of the given equilibrium state may "run away" from that equilibrium state.

region of interest (ROI) : region of interest (ROI) a restricted set of image pixels upon which image processing operations are performed. Such a set of pixels might be those representing an object that is to be analysed or inspected.

region of support : region of support the region of variable or variables where the function has non-zero value.

Regional reserves, regional reserve estimates (coal): Same as reserves; alternative wording is used by EIA to distinguish regional reserves, which are derived by factoring (downward) from a demonstrated reserve base for one or more study areas or regions, from reserves at active mines, which are aggregated (upward) from reserve estimates reported by individual mines on Form EIA-7A.

Regional Transmission Group: A utility industry concept that the Federal Energy Regulatory Commission (FERC) embraced for the certification of voluntary groups that would be responsible for transmission planning and use on a regional basis.

register: A group of flip-flops capable of storing data.

register : register a circuit formed from identical flip-flops or latches and capable of storing several bits of data.

register direct addressing : register direct addressing addressing method in which the memory address of the data to be accessed or stored is found in a general purpose register.

register file : register file a collection of CPU registers addressable by number.

register indirect addressing : register indirect addressing an instruction addressing method in which the register field contains a pointer to a memory location that contains the memory address of the data to be accessed or stored.

register renaming : register renaming dynamically allocating a location in a special register file for an instance of a destination register appearing in an instruction prior to its execution. Used to remove antidependencies and output dependencies. See also reorder buffer.

register transfer notation : register transfer notation a mathematical notation to show the movement of data from one register to another register by using a backward arrow. Notation used to describe elementary operations that take place during the execution of a machine instruction.

register window : register window in the SPARC architecture, a set or window of registers selected out of a larger group.

registration : registration the process of aligning multiple images obtained from different modalities, at different timepoints, or with different image acquisition parameters. See fusion.

Regression Analysis: A statistical method of determining, or predicting, the value of a dependent variable, based on levels of one or more known independent variables.

regular cue : regular cue any regular recurring point/element of a signal that can be used to signal the start of a new signal sequence; e.g., the leading edge of a 60-Hz square wave is a regular cue.

regular form : regular form a particular form of the state space description of a dynamical system. This form is obtained by a suitable transformation of the system state. The regular form is useful in control design.

Regular gasoline: Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than 88. Note Octane requirements may vary by altitude.

regularization : regularization a procedure to add a constraint term in the optimization process that has a stabilizing effect on the solution.

Regulated entity: For the purpose of EIA's data collection efforts, entities that either provide electricity within a designated franchised service area and/or file forms listed in the Code of Federal Regulations, Title 18, part 141 are considered regulated entities. This includes investor-owned electric utilities that are subject to rate regulation, municipal utilities, federal and state power authorities, and rural electric cooperatives. Facilities that qualify as cogenerators or small power producers under the Public Utility Regulatory Power Act (PURPA) are not considered regulated entities.

Regulated streamflow: The rate of flow past a given point during a specified period that is controlled by reservoir water release operation.

Regulating Transformer: A transformer used to vary the voltage, or phase angle, of an output circuit. It controls the output within specified limits and compensates for fluctuations of load and input voltage.

Regulation: The governmental function of controlling or directing economic entities through the process of rulemaking and adjudication.

Regulation: See "Voltage Regulation".

regulation: A term used to describe the action of holding a constant electrical value in the face of fluctuations.

regulation : regulation the change in voltage from no-load to full-load expressed as a percentage of full-load voltage.

regulation : An activity of government to control or direct economic entities by rulemaking

and adjudication.

Regulation, procedures, and practices: A utility commission carries out its regulatory functions through rulemaking and adjudication. Under rulemaking, the utility commission may propose a general rule of regulation change. By law, it must issue a notice of the proposed rule and a request for comments is also made; the Federal Energy Regulatory Commission publishes this in the Federal Register. The final decision must be published. A utility commission may also work on a case-by-case basis from submissions from regulated companies or others. Objections to a proposal may come from the commission or intervenors, in which case the proposal must be presented to a hearing presided over by an administrative law judge. The judge's decision may be adopted, modified, or reversed by the utility commissioners, in which case those involved can petition for a rehearing and may appeal a decision through the courts system to the U.S. Supreme Court.

Regulator: A term used to describe a valve or device that limits the pressure in a passage

Regulator: A device that is used to control the voltage of a circuit by raising and lowering it. Howard Industries is a manufacturer of Regulators.

regulator : regulator a controller designed to maintain the state of the controlled variable at a constant value, despite fluctuations of the load.

Reheating: Heating metal again to hot working temperature. In general no structural changes are intended.

Reheating coils: A part of some air-conditioning systems. Electric coils in air ducts used primarily to raise the temperature of circulated air after it was over-cooled to remove moisture. Some buildings have reheating coils as their sole heating source.

Reid Vapor Pressure (RVP): An indirect measure of the rate at which petroleum liquids evaporate. It's the absolute vapor pressure of a crude oil, or of single or mixed liquid petroleum products, as measured by the Reid Method (ASTM Method D 323).

reinforced insulation: Single insulation system applied to live parts which provide a degree of protection against electric shock equivalent to double insulation under the conditions specified in the relevant standard. The term 'single insulation' does not imply that the insulation must be one homogeneous piece. It may comprise several layers which cannot be tested singly as supplementary or basic insulation.

Reinforced Polymer Motor: Also referred to as "RPM". See "Polymer Concrete".

Reinforced Sheath: The outermost covering of a cable that has a cable sheath constructed in layers with a reinforcing material, usually a braided fiber, molded in place between layers.

reinforcement learning : reinforcement learning learning on the basis of a signal that tells the learning system whether its actions in response to an input (or series of inputs) are good or bad. The signal is usually a scalar, indicating how good or bad the actions are, but may be binary.

Reinforcing Bar (Rebar): A commodity grade steel used to strengthen concrete in highway and building construction.

Reinjected: The forcing of gas under pressure into an oil reservoir in an attempt to increase recovery.

Reinserted fuel: Irradiated fuel that is discharged in one cycle and inserted in the same reactor during a subsequent refueling. In a few cases, fuel discharged from one reactor has been used to fuel a different reactor.

Reinsertion: The process of returning nuclear fuel that has been irradiated and then removed from a reactor back into a reactor for further irradiation. Reinserted assemblies are assemblies that have been irradiated in a cycle, were not in the core in the prior cycle (cycle N), and which are in the core in the current cycle (cycle N+1).

rejection criteria : rejection criteria criteria such as poor surface texture, existence of scratch marks, and out-of-tolerance distance measures, which constitute reasonable grounds for rejecting a product from a product line.

Rejection Fuse: A current-limiting fuse with high interrupting rating and with unique dimensions or mounting provisions.

Rejection Fuse Block: A fuse block designed to accept fuses of a specific class.

Rejects Box: Also known as a HOLES box, where scrap sheets accumulate during production.

relational model : relational model a logical data structure based on a set of tables having common keys that allows the relationship between data items to be defined without considering the physical database organization.

Relative Accuracy : Measure in LSB of the accuracy of an ADC. It includes all non-linearity and quantization errors.

relative addressing : relative addressing an addressing mechanism for machine instructions in which the address of the target location is given by the contents of a specific register and an offset held as a constant in the instruction added together. See also PC-relative addressing, index register, base address.

relative humidity: The ratio of the pressure of water vapour actually present in the atmosphere to the pressure of the vapour which would be present if the vapour were saturated at the same temperature. [This is also sometimes expressed in terms of masses rather than pressure].

relative intensity noise: relative intensity noise noise resulting from undesirable fluctuations of the optical power detected in an optical communication system.

relative permeability: Ratio of the permeability of the magnetic material to that of free space. The permeability of free space is $4\pi \times 10^{-7}$ H/m. The permeability of air is very nearly equal to the permeability of free space.

relative permittivity: Ratio of the permittivity of the dielectric material to that of free space. The permittivity of free space is 8.854×10^{-12} F/m. The permittivity of air is very nearly equal to the permittivity of free space.

relative-address coding : relative-address coding in facsimile coding, represents the transition between levels on a particular scan line relative to transitions on the preceding scan line. A relative-address coding system has a pass mode code-word for indicating where a pair of transitions on the previous line does not have corresponding transitions on the current line and a runlength coding mode applied when there is no nearby suitable transition on the previous line. CCITT Group IV facsimile uses a form of relative-address coding.

relaxation labeling : relaxation labeling an iterative mathematical procedure in which a system of values is processed, e.g., by mutual adjustment of adjacent or associated values, until a stable state is attained. Especially useful for achieving consistent optimal estimates of pixel intensities or deduced orientation values for points on the surface of an object. See also relaxation, optimization.

relaxation oscillations : relaxation oscillations the damped out-put oscillations that occur in some laser os-cillators when they are perturbed from steady state.

relaxation time : relaxation time the time in which the ini-tial distribution of charge will diminish to $1/e$ of its original value.

Relay: An electromechanical device that uses electromagnetism to mechanically switch electrical circuits.The output contacts are designed to be either normally open (NO) or normally closed (NC).Some relays provide both arrangements and multiple switches.

relay: An electric device that is designed to interpret input conditions in a prescribed manner and, after specified conditions are met, to respond and cause contact operation or similar abrupt changes in associated electric control circuits.

Relay: A device which is operative by variation in the conditions of one electric circuit to effect the operation of other devices in the same or another electric circuit.

relay : relay a device that opens or closes a con-tact when energized. Relays are most commonly used in power systems, where their function is to detect defective lines or apparatus or other abnormal or dangerous occur-rences and to initiate appropriate control ac-tion. When the voltage or current in a relay exceeds the specified “pickup” value, the re-lay contact changes its position and causes an action in the circuit breaker. A decision is made based on the information from the mea-suring instruments and relayed to the trip coil of the breaker, hence the name “relay.” Other relays are used as switches to turn on or off equipment.

Relay - Numerical: A protection relay which utilizes a digital signal processor to execute the protection algorithms in software.

relay channel : relay channel a multiterminal channel in which the receiver observes the transmitted signal through two channels: one direct to the transmitter, the other via an intermediate transmitter/receiver pair.

Relay station, major. : A message relay station is designated as a major message relay station when: a.Two or more trunk circuits connected thereto provide and alternate route.b.To meet command requirements.

Relay station, minor. : A message relay station is designated as a minor relay station when it has message relay responsibility but does not provide an alternate message relay route.

Relays: A relay is a low-powered device used to activate a high-powered device. Relays are used to trigger circuit breakers and other switches in substations and transmission and distribution systems.

Relays - Distance: Relays used on transmission lines that use a variety of sensors and measurements to determine when an unusual condition exists at some distance, out on the transmission circuit.

Relays - Over-current: Protective relays used on power systems that detect excessive currents and send signals to protective devices, such as power circuit breakers.

Relays - Voltage: Protective relays used on power systems that detect when line voltage has gone outside of an acceptable range, either up or down, and send a signal to a protective device or system.

Release Point: The point at which a sensor returns to its original state as the target leaves the sensing field. Also called "reset point."

Releasing officer. : The person who may authorise the transmission of a message for and in the name of the originator.

reliability: The guarantee of system performance at all times and under all reasonable conditions to assure constancy, quality, adequacy and economy of electricity. It is also the assurance of a continuous supply of electricity for customers at the proper voltage and frequency.

reliability : reliability the probability that a component or system will function without failure over a specified time period, under stated conditions.

Reliability (electric system): A measure of the ability of the system to continue operation while some lines or generators are out of service. Reliability deals with the performance of the system under stress.

Reliability coordinator (electric): The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operators vision. See NERC definition.

reliability criteria: reliability criteria a set of operating conditions that the system operator adheres to in order to guarantee secure operation.

reliability : Electric system reliability has two components - adequacy and security.

Relief: A term for clearance or clearance angle.

Reline: The process of replacing the refractory lining of a liquid steel vessel. Once it wears out, the brick lining of a furnace must be cooled, stripped and replaced. This maintenance can be significant because a blast furnace reline may require up to three months to complete.

relocatability : relocatability the capability for a program to be loaded into any part of memory that is convenient and still execute correctly.

Relocation of tailings: Relocation of tailings is sometimes necessary if the pile poses a threat to inhabitants or the environment, for example, through being situated too close to populated areas, on top of aquifers or other sources of water, or in unstable areas such as flood plains or faults near earthquake zones.

relocation register : relocation register register used to facilitate the placement in varying locations of data and instructions. Actual addresses are calculated by adding program-given addresses to the contents of one or more relocation registers.

reluctance: The reluctance of a magnetic material is the ability to oppose the flow of magnetic flux. It is the constant of proportionality between the applied mmf and the flux produced. [Unit henry-1]

reluctance : reluctance the resistance to magnetic flux in a magnetic circuit; analogous to resistance in an electrical circuit.

reluctance motor: reluctance motor a motor constructed on the principle of varying reluctance of the air gap as a function of the rotor position with respect to the stator coil axis. The torque in these motors arises from the tendency of the rotor to align itself in the minimum re-

reluctance torque : reluctance position along the length of the air gap.

Remaining (resources/reserves) (coal) : The amount of coal in the ground after some

mining, excluding coal in the ground spoiled or left in place for which later recovery is not feasible.

Remanence: The remaining flux density after the magnetizing force has been removed.

remanence: remanence (1) in a ferromagnetic material, the value of the magnetic flux density when the magnetic field intensity is zero.(2) the magnetic induction (B) of a magnet after the magnetizing field is removed and an air gap (hence self-demagnetizing field) is introduced to the magnetic circuit. Also called retentivity or residual induction.

remanence: The residual magnetisation of a ferromagnetic substance subjected to a hysteresis cycle when the magnetising field is reduced to zero.

remanence : reluctance torque the type of torque a reluctance machine's operation is based upon. A reluctance torque is produced in a magnetic material in the presence of an external magnetic field, which makes it to line up with the external magnetic field. An induced field due to fringing flux develops a torque that eventually twists the magnetic material around to align itself with the external field.

remanent coercivity : remanent coercivity the magnetic field required to produce zero remanent magnetization in a material after the material was saturated in the opposite direction.

remanent magnetism : remanent magnetism See residual

remanent polarization : remanent polarization the residual or remanent polarization of a material after an applied field is reduced to zero. If the material was saturated, the remanent value is usually referred to as the polarization, although even at smaller fields a (smaller) polarization remains.

Remote: A station near a pump consisting of both an 'On' and an 'Off' button. A pump can be started or stopped by its corresponding remote.

Remote analogue loopback. : An analogue loopback test that forms the loop at the line side (analogue output) of the remote modem.

Remote composite loopback. : A composite loopback test that forms the loop at the output (composite side) of the remote multiplexor.

remote control: The Control of an electrical device from a remote point.

Remote Control Point: The remote control point is a SCADA interface. Several RCP's may be managed with connections are done at a gateway or at substation computers.

Remote digital loopback. : A digital loopback test that forms the loop at the dte side (digital input) of the remote modem.

remote sensing : remote sensing the use of radar, satellite imagery, or radiometry to gather data about a distant object. Usually, the term refers to the use of microwaves or millimeter waves to map features or characteristics of planetary surfaces, especially the Earth's.

Applications include military, meteorological, botanical, and environmental investigations.

Remote systems: Systems off of the utility grid.

Remote Terminal Unit: Industrial control and data collection device similar to a PLC, but designed for remote communication via wire-based or radio telemetry. Reputability: The ability of an instrument to give the same output or reading under repeated, identical conditions.

remote terminal unit (RTU) : remote terminal unit (RTU) hardware that gathers system-wide real-time data from various locations within substations and generating plants for telemetry to the energy management system.

removable disk : removable disk that can be removed from disk drive and replaced, in contrast with a non-removable disk, which is permanently mounted. See also exchangeable disk.

Removable Sections: Side panel section of tubes that make up the vessel cover. The removable sections are located on the north and south sides of both boilers.

rendering : rendering (1) the preparation of the representation of an image to include illumination, shading, depth cueing, coloring, texture, and reflection.(2) common techniques include Phong and Gouraud shading; more complex rendering models such as raytracing and radiosity emphasize realistic physics models for calculating light interactions and texture interactions with objects.

Renewable diesel fuel (other): Diesel fuel and diesel fuel blending components produced from renewable sources that are coprocessed with petroleum feedstocks and meet requirements of advanced biofuels. This category "other" pertains to the petroleum supply data system.

renewable energy: Energy sources that are derived from the sun or other natural processes and which can be naturally replenished. Examples include wind, solar, geothermal, hydro, photovoltaic, wood and waste. [Non-renewable energy sources include coal, oil, and gas which all exist in finite amounts.]

Renewable energy resources: Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.

Renewable fuels: Fuels that can be easily made or "renewed." We can never use up renewable fuels. Types of renewable fuels are solar, wind, and hydropower energy.

Renewable fuels (other): Fuels and fuel blending components, except biomass-based diesel fuel, renewable diesel fuel, and fuel ethanol, produced from renewable biomass. This category "other" pertains to the petroleum supply data system.

Renewable Fuse: An enclosed fuse the body of which can be opened and the fusible link replaced for re-use. This fuse usually does not have a filter.

renewable fuse : renewable fuse a fuse consisting of a reusable cartridge and a fusible element that can be replaced.

Reoil: Oil put on the sheet after cleaning and before coiling for shipment to prevent water stain.

reorder buffer : reorder buffer a set of storage locations provided for register renaming for holding results of instructions. These results may be generated not in program order. At some stage, the results will be returned to the true destination registers.

Repair Welding: Any welding carried out after delivery to the end user, i.e., after the casting has been in service.

Repeat Accuracy: The measure of variation in operating distance between successive operations under constant operating conditions. The measurement is often expressed as a maximum percentage of the "operating distance." (NOTE The target must also remain within the sensing field long enough to allow the load sufficient time to respond to the output signal of the sensor.)

repeatability : repeatability the ability of a sensor to re-produce output readings for the same

value of measurand, when applied consecutively and under the same conditions.

repeater : repeater electromagnetic device that re-receives a signal and amplifies it and retransmits it. In digital systems, the signal is re-generated.

Repeater. : A device used to extend transmission ranges/distances by restoring signals to their original size or shape. Repeaters function at the physical layer of the OSI model. Reply (1).

repetition coding : repetition coding the simplest form of error control coding. The information symbol to be transmitted is merely repeated an uneven number of times. A decision regarding the true value of the symbol transmitted is then simply made by deciding which symbol occurred the greatest number of times.

Rephosphorizing (Steel): A Ladle chemical treatment consisting of the addition of phosphorus as a work hardening agent when temper rolling black plate or sheet steel resulting in greater hardness and stiffness and with a corresponding loss in ductility. . NOTE: Black Plate in tempers T5 and T6 (R/B range 68/84) are temper rolled from Rephosphorized steel.

Replacement energy source for primary heating: For the CBECS (an EIA consumption survey), the heating energy source to which the building could switch within one week without major modifications to the main heating equipment, without substantially reducing the area heated, and without substantially reducing the temperature maintained in the heated area.

Replacement vehicle: A vehicle which is acquired in order to take the place of a vehicle which is being retired from service. These acquisitions do not increase the size of the company fleet.

Replate: To reprocess a coil on the plater that has been plated previously.

Replenish: To add fluid to maintain a full hydraulic system.

Replicast Process (Cs): A ceramic shell process similar to the investment casting process. Uses a pattern made from expanded polystyrene (EPS) and is surrounded by a thin ceramic shell.

Reply (2). : An answer to a challenge. Replies promulgated in key lists take the form of identities of pyrotechnics.

Report State: The State, including adjacent offshore continental shelf areas in the Federal domain, in which a company operated natural gas gathering, transportation, storage, and/or distribution facilities or a synthetic natural gas plant covered by the individual report.

Report week: A calendar week beginning at 1201a.m. on Sunday and ending at midnight on Saturday.

Report year (calendar): The 12-month period, January 1 through December 31

Report year (fiscal): A 12-month period for which an organization plans the use of its funds. The fiscal year is designated by the calendar year in which it ends.

Reporting: The average number of Btu per cubic foot of gas at 60 degrees Fahrenheit and 14.73 psia delivered directly to consumers. Where billing is on a thermal basis, the heat content values used for billing purposes are to be used to determine the annual average heat content.

Repository: A permanent disposal place for radioactive wastes.

repowered plant : An existing power facility that has been substantially rebuilt to extend its useful life. Reregulation could employ the same or different regulatory practices as those used

before restructuring.

Repowering: Refurbishment of a plant by replacement of the combustion technology with a new combustion technology, usually resulting in better performance and greater capacity.

representation singularity of : representation singularity of a set of orientations for which the determinant of the transformation matrix in the analytical Jaco-bian vanishes. See also analytical Jacobian.

representative level : representative level one of the discrete output values of a quantizer used to represent all input values in a range about the represen-tative level. See also decision level.

Repressuring: The injection of gas into oil or gas formations to effect greater ultimate recovery.

Reprocessing: Synonymous with chemical separations.

Reprocessing: Chemical treatment of spent reactor fuel to separate uranium and plutonium from the small quantity of fission product, waste products and transuranic elements, leaving a much reduced quantity of high-level waste.

reprocessing : reprocessing the recycling of reactor fuel by separation into fissile, non-fissile, radioac-tive and non-radioactive components such that wastes can be isolated and fissile ma-terial re-used to make more reactor fuel.

repulsion–induction motor : repulsion–induction motor a single-phase motor designed to start as a repulsion motor, then run as an induction motor. The rotor has a DC-type winding with brushes shorted together, in addition to the normal squirrel cage winding. Although it is an ex-pensive design, it provides excellent start-ing torque with low starting current (similar to a universal motor) and relatively constant speed under load.

requirements analysis : requirements analysis a phase of soft-ware development life cycle in which the business requirements for a software product are defined and documented.

Requirements power: The firm service needs required by designated load plus losses from the points of supply.

Reregulation: The design and implementation of regulatory practices to be applied to the remaining regulated entities after restructuring of the vertically-integrated electric utility. The remaining regulated entities would be those that continue to exhibit characteristics of a natural monopoly, where imperfections in the market prevent the realization of more competitive results, and where, in light of other policy considerations, competitive results are unsatisfactory in one or more respects. Regulation could employ the same or different regulatory practices as those used before restructuring.

reregulation : The design and implementation of regulatory practices to be applied to the remaining regulated entities after restructuring of the vertically-integrated electric utility.

Reroll Stock: A semi finished rolled product of rectangular cross section in coiled form suitable for further rolling. Examples: ?Foil Stock? and ?Sheet Stock?.

RES: Acronym for the Residential Experiment Stations.

Resale (wholesale) sales: Resale or wholesale sales are electricity sold (except under exchange agreements) to other electric utilities or to public authorities for resale distribution. (This includes sales to requirements and nonrequirements consumers.)

Resealable Cap (Battery): A safety vent valve which is capable of closing after each pressure release from within a cell.

Research and development (RD): Basic and applied research in the sciences and engineering and the design and development of prototypes and processes, excluding quality control, routine product testing, market research, sales promotion, sales service, research in the social sciences or psychology, and other non-technological activities or technical services.

Reseller: A firm (other than a refiner) that is engaged in a trade or business that buys refined petroleum products and then sells them to a purchaser who is not the ultimate consumer of those refined products.

resellers : Companies that purchase utility service from a wholesaler and resell it to consumers.

reservation ALOHA (R-ALOHA) : reservation ALOHA (R-ALOHA) a class of multiple access control protocol in which the user transmits the first packet in random access fashion. If successful, the user will have a fixed part of the channel capacity allocated.

reservation station : reservation station storage locations placed in front of functional units and provided to hold instructions and associated operands when they become available. Used in a superscalar processor.

Reserve: That portion of the demonstrated reserve base that is estimated to be recoverable at the time of determination. The reserve is derived by applying a recovery factor to that component of the identified coal resource designated as the demonstrated reserve base.

Reserve additions: The estimated original, recoverable, salable, and new proved reserves credited to new fields, new reservoirs, new gas purchase contracts, amendments to old gas purchase contracts, or purchase of gas reserves in-place that occurred during the year and had not been previously reported. Reserve additions refer to domestic in-the-ground natural gas reserve additions and do not refer to interstate pipeline purchase agreements; contracts with foreign suppliers; coal gas, SNG, or LNG purchase arrangements.

Reserve capacity: The amount of generating capacity a central power system must maintain to meet peak loads.

reserve capacity : Capacity in excess of that required to carry peak load.

Reserve generating capacity: Amount of generating capacity available to meet peak or abnormally high demands for power and to generate power during scheduled or unscheduled outages.

Reserve margin (operating): The amount of unused available capability of an electric power system (at peak load for a utility system) as a percentage of total capability.

reserve margin : The percentage of installed capacity exceeding the expected peak demand during a specified period.

Reserve revisions: Changes to prior year-end proved reserves estimates, either positive or negative, resulting from new information other than an increase in proved acreage(extension). Revisions include increases of proved reserves associated with the installation of improved recovery techniques or equipment. They also include correction of prior year arithmetical or clerical errors and adjustments to prior year-end production volumes to the extent that these alter reserves estimates.

Reserves changes: Positive and negative revisions, extensions, new reservoir discoveries in old fields, and new field discoveries that occurred during the report year.

Reserves, coal: Quantities of unextracted coal that comprise the demonstrated base for future production, including both proved and probable reserves. Also see Proved energy

reserves; Probable energy reserves; Energy reserves; Proved (measured) reserves, coal; and Probable(indicated) reserves, coal.

Reserves, energy: See Proved energy reserves.

Reserves, net: Includes all proved reserves associated with the company's net working interests.

Reservoir: A chamber used to store fluid.

Reservoir: A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (crude oil and/or natural gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system.

Reservoir capacity: The present total developed capacity (base and working) of the storage reservoir, excluding contemplated future development.

Reservoir repressuring: The injection of a pressurized fluid (such as air, gas, or water) into oil and gas reservoir formations to effect greater ultimate recovery.

reset scrambling : reset scrambling a technique of random-izing a source bit sequence by adding the sequence to a pseudo-random bit stream using element-wise modulo-2 arithmetic. The source sequence is recovered at the de-coder through addition of the demodulated bit stream with the same pseudo-random sequence. The pseudo-random sequences are usually generated with linear feedback shift registers which must be aligned with a re-set or framing signal in order to recover the source sequence accurately.

reset time : reset time for a line recloser or circuit breaker, a time begins when the device successfully recloses following a temporary fault. After the reset time elapses, the fault cycle is considered over, and any subsequent fault will be treated as the first fault in a new cycle.

Resetting value: The limiting value of the characteristic quantity at which the relay returns to its initial position.

residential: The residential sector is defined as private household establishments which consume energy primarily for lighting, refrigeration, cooking, heating and air conditioning.

Residential (Lighting): A residential development, or a mixture of residential and small commercial establishments, characterized by few pedestrians during nighttime hours. This definition includes area with singlefamily homes, townhouses, and/or small apartment buildings.

Residential building: A structure used primarily as a dwelling for one or more households.

Residential consumers: Consumers using gas for heating, air conditioning, cooking, water heating, and other residential uses in single and multi-family dwellings and apartments and mobile homes.

Residential energy consumption survey (RECS): A national multistage probability sample survey conducted by the Energy End Use Division of the Energy Information Administration. The RECS provides baseline information on how households in the United States use energy. The Residential Transportation Energy Consumption Survey (RTECS) sample is a subset of the RECS. Household demographic characteristics reported in the RTECS publication are collected during the RECS personal interview.

Residential heating oil price: The price charged for home delivery of No. 2 heating oil, exclusive of any discounts such as those for prompt cash payment. Prices do not include taxes paid by the consumer.

residential loop : residential loop two radial sources coming in to an open point used for switching.

Residential propane price: The "bulk keep full" price for home delivery of consumer-grade propane intended for use in space heating, cooking, or hot water heaters in residences.

Residential sector: An energy-consuming sector that consists of living quarters for private households. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters. Note Various EIA programs differ in sectoral coverage.

Residential type central air conditioner: There are four basic parts to a residential central air-conditioning system (1) a condensing unit, (2) a cooling coil, (3) ductwork, and (4) a control mechanism such as a thermostat. There are two basic configurations of residential central systems (1) a "split system" where the condensing unit is located outside and the other components are inside, and (2) a packaged-terminal air-encased in one unit and is usually found in a "utility closet."

Residential vehicles: Motorized vehicles used by U.S. households for personal transportation. Excluded are motorcycles, mopeds, large trucks, and buses. Included are automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles. In order to be included (in the EIA survey), vehicles must be (1) owned by members of the household, or (2) company cars not owned by household members but regularly available to household members for their personal use and ordinarily kept at home, or (3) rented or leased for 1 month or more.

Residential/commercial (consumer category): Housing units, wholesale or retail businesses (except coal wholesale dealers); health institutions (hospitals, social and educational institutions (schools and universities); and Federal, state, and local governments (military installations, prisons, office buildings, etc.). Excludes shipments to Federal power projects, such as TVA, and rural electrification cooperatives, power districts, and state power projects.

Residual Current: The algebraic sum, in a multiphase system, of all the line currents.

residual current circuit breaker rccb: [see residual current device]

residual current device rcd : Devices are designed to protect both equipment and users from fault currents between the live and earth conductors. An RCD detects the residual current between the live and neutral conductors and prevents fatal electric shocks by disconnecting the supply if the detected current exceeds a safe limit (typically 30mA).

residual current : Algebraic sum of the currents in the live conductors of a circuit at a point in the electrical installation.

residual error : residual error the degree of misfit between an individual data point and some model of the data. Also called a "residual".

Residual fuel oil: A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government service and inshore powerplants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production

of electric power, space heating, vessel bunkering, and various industrial purposes.

residual fuel oil : The topped crude oil remaining after the refining operation. Residual fuel oil is used for the production of electric power and various industrial purposes.

residual magnetism : residual magnetism a form of permanent magnetism, referring to the flux remaining in a ferromagnetic material after the MMF that created the flux is removed. For example, if a bar of steel is surrounded by a coil and current is applied to the coil, the steel bar will create a magnetic field due to the rotation of the domains in the steel. After the current is removed, some of the domains will remain aligned, causing magnetic flux.

residual overcurrent relay : residual overcurrent relay an overcurrent relay that is connected to sense residual current. Residual current is the sum of the three phase currents flowing in a current transformer secondary circuit, and is proportional to the zero sequence current flowing in the primary circuit at that point.

residual pyramid : residual pyramid See predictive pyramid.

Residual Stress: Macroscopic stresses that are set up within a metal as the result of non uniform plastic deformation. This deformation may be caused by cold working or by drastic gradients of temperature from quenching or welding.

Residual Voltage: The algebraic sum, in a multiphase system, of all the line-to-earth voltages.

Residual Voltage: it is the property of any substance due to which it restricts the flow of current or flow of electrons through it.

residual voltage or discharge voltage : The voltage that appears between the line and earth terminals of the surge diverter during the passage of discharge currents.

Residuals: Any element remaining in any alloy following melting and casting which was not added to meet an analytical specification limit.

Residue gas: Natural gas from which natural gas processing plant liquid products and, in some cases, nonhydrocarbon components have been extracted.

Residuum: Residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1,000 degrees Fahrenheit.

Resilient: The property of a substance to return to its original configuration after release of an applied force.

resin: Natural resins are amorphous organic compounds which are secreted by certain plants and insects. They are usually insoluble in water but soluble in various organic solvents.

Resistance: The opposition to current flow, expressed in ohms.

resistance: The resistance of an element denotes its ability to resist the current flow through it. [Unit ohm or W].

Resistance: The property of an electric circuit which determines for a given current the rate at which electric energy is converted into heat and has a value such that the current squared multiplied by the resistance gives the power converted.

resistance : resistance ratio of the potential of an electrical current applied to a given conductor to the current intensity value.

Resistance (R): The opposition to current flow in a circuit; measured in ohms.

resistance area (for an earth electrode only): The surface area of ground (around an earth electrode) on which a significant voltage gradient may exist.

resistance ground : resistance ground a grounding scheme in which the neutral of Y-connected machines is connected to ground through a resistance such that ground-fault

currents are limited.

resistance grounded : resistance grounded See low resistance grounded system, high-resistance grounded system.

resistance thermometer: A device to measure temperature using the temperature coefficient of the material of the device (usually platinum wire).

Resistive Conductor: A conductor used for its high electric resistance characteristics.

Resistive Load: A device which opposes the flow of electric current. There is a voltage drop across a resistive load, which causes the device to dissipate heat.

resistive mixer : resistive mixer a device used to convert microwave frequencies to intermediate frequencies. Depending on the frequency of microwaves to be converted, the intermediate frequencies can be UHF, VHF, or HF.

Resistive voltage drop: The voltage developed across a cell by the current flow through the resistance of the cell.

resistivity : resistivity (1) the product of the resistance of a given material sample times the ratio of its cross-sectional area to its length.(2) an electrical material property described by a tensor constant indicating the impedance of free electron flow in the material. Resistivity relates the electric field strength to the conduction current, and can be expressed as the inverse of the conductivity.

Resistor : An electrical component designed to provide a specific resistance. Available in many formats such as fixed, tapped, and variable. See potentiometer and rheostat.

Resolution: The capacity of an optical or radiation system to separate closely spaced forms or entities; also, the degree to which such forms or entities can be discriminated.

resolution: The smallest change that can occur in the output for a change in the input.

resolution : resolution (1) the act of deriving from a sound, scene, or other form of intelligence, a series of discrete elements from which the original may subsequently be reconstructed. The degree to which nearly equal values of a quantity can be discriminated.(2) the fineness of detail in a measurement. For continuous systems, the minimum increment that can be discerned.(3) the ability to distinguish between two units of measurement. (4) the number of pixels per linear unit (or per dimension) in a digital image. (5) the smallest feature of a given type that can be printed with acceptable quality and control. (6) refers to the ability to resolve two point targets which are closely spaced in time or frequency. For a linear system, resolution can be measured in terms of the width of the output pulse produced by a point target. In imaging applications, resolution refers to the number of independently detectable, controllable or displayable points.

Resolution . : The ability of a radar or optical system to distinguish between two adjacent objects and display them as separate images.

resolvable component : resolvable component a component of a signal that exists in a group of components (a sum of signals) such that the amplitude of the component can be approximately determined by correlation of the overall signal with a component signal of unit amplitude. Typically, the different signal components are delayed versions of the same signal received at a receiver in a channel with multipath propagation. The different delay components are then resolvable if the relative delay between any two components is greater than the reciprocal of the transmitted signal bandwidth.

resolver : resolver an electric machine that is used to provide information about the position

of a motor-driven system. The shaft of the re-solver is connected to the main motor either directly or through gears. The rotor contains a single winding, while the stator typically contains two windings in quadrature. One stator winding and the rotor winding are excited, while the remaining stator winding is shorted. When the resolver is rotated by the main motor, voltages are produced in the stator windings that can be used to determine the position. For multi-turn systems, two re-solvers (coarse and fine) may be required.

resonance: A condition in which a quantity reaches maximum value. In electrical circuits, it is a condition in an RLC circuit in which the magnitude of the voltage or the current becomes a maximum or the circuit becomes purely resistive.

resonance fluorescence : resonance fluorescence the modified fluorescence produced when a quantum mechanical system is strongly driven by one or more near-resonant electromagnetic fields.

resonance Raman system : resonance Raman system Raman systems that have a near-resonant intermediate state. Resonance Raman systems are sometimes referred to as lambda systems and can exhibit coherent population trapping.

Resonance : A circuit condition when the inductive reactance (X_L) equals the capacitive reactance (X_C). A resonant circuit is one that has been tuned to that condition and resonant frequency is that frequency that resonance occurs in a circuit and provides a maximum output for one of its circuit variables.

resonant : resonant in any circuit or system under excitation, the frequency at which a pair of reactive components cancels (pole or zero) resulting in a natural mode of vibration.

resonant antenna : resonant antenna linear antennas that exhibit current and voltage standing wave patterns formed by reflections from the open end of the wire.

resonant cavity : resonant cavity cavity with reflecting surfaces or mirrors that can support low-loss oscillations. By closing a metallic waveguide by two metallic surfaces perpendicular to its axis, a cylindrical cavity is formed. Resonant modes in this cavity are designated by adding a third subscript so as to indicate the number of half-waves along the axis of the cavity. When the cavity is a rectangular parallelepiped, the axis of the cylinder from which the cavity is assumed to be made should be designated, since there are three possible cylinders out of which the parallelepiped may be made. More generally, each closed cavity may sustain a discrete infinity of resonant field distributions.

resonant frequency : resonant frequency (1) a frequency at which the input impedance of an device is nonreactive, since the capacitive and inductive stored energy cancel each other.(2) an oscillation frequency of the modes of a resonator.

resonant link inverter : resonant link inverter an inverter that uses a resonant circuit to convert a constant DC voltage to a pulsating DC voltage. The switching elements in the inverter are then turned off during the times that the input voltage is zero, a technique referred to as soft-switching. Resonant switching techniques reduce the switching losses and allow high switching frequency operation to reduce the size of magnetic components in the inverter unit.

resonant tunneling : resonant tunneling refers to the process of resonant enhancement of electron tunneling by intermediate energy states. In the simplest case, it occurs when incoming electrons coincide in energy with the states created in the well.

resonator : resonator (1) circuit element or combination of elements, which may be either

lumped or distributed, that exhibit a resonance(s) at one or more frequencies. Generally, a resonant condition coincides with the frequency where the impedance of the circuit element(s) is only resistive.(2) cavity with reflecting surfaces designed to support low-loss oscillation modes. See also bi-directional resonator, concentric resonator, confocal resonator, high-loss resonator, plane-parallel resonator, ring resonator, standing-wave resonator, unidirectional resonator, unstable resonator.

resonator stability : resonator stability perturbation stability of an axial light ray in a resonator; bounded-ness of ray trajectories; corresponds to confinement of the resonator modes; not the same as mode stability (unstable resonators have stable modes).

resource auction multiple access (RAMA) : resource auction multiple access (RAMA) a multiple access protocol that stipulates part of the frame for contention. Unlike PRMA and D-TDMA, the contention is not performed by an ALOHA-type of protocol but by an auction — a tree-sorting type of

resource class. : (in lan technology) a collection of computers or computer ports that offer similar facilities, such as the same application program; each can be identified by a symbolic name.

resource conflict : resource conflict the situation when a component such as a register or functional unit is required by more than one instruction simultaneously. Particularly applicable to pipelines.

Resources (Coal) : Naturally occurring concentrations or deposits of coal in the Earth's crust, in such forms and amounts that economic extraction is currently or potentially feasible.

Respirator: A filtering device which covers the nose and mouth and prevents inhalation of dust or fumes; should have the U.S. Bureau of Mines certificate or approval for the specific contaminant being filtered out. Handkerchiefs and gauze masks give little or no protection.

Respondent: A company or individual who completes and returns a report or survey form.

Responder. : An electronic device used to receive an electronic challenge and display a reply thereto.

Response Time: The elapsed time that occurs after the beginning of a function until its completion. For example, the time elapsed between application of electrical power to a solenoid and its full excursion or stroke.

Response Time: The time for a measurement device's output signal to reach 99% of its final value after a step change in the applied input.

Response Time: Time it takes for an output of a photoelectric sensor to respond to an input signal.

Response Time: The length of time required for an output of a transducer to rise to a specific percentage of its final value as a result of a step change in input.

response time : The amount of time it takes for a device to react to an input signal.

Response time. : The elapsed time between the generation of the last character of a message at a terminal and the receipt of first character of the replay (often an echo). It includes all propagation delays.

rest mass: The mass of a body when at rest relative to the observer. Restructuring usually refers to separation of the various utility functions into individually-operated and-owned entities.

restart : restart the act of restarting a hardware or software process.

restoration : restoration the act of restoring electric service to a consumer's facility. A distinction is made between restoration and repair as repair implies that whatever was the cause of the outage has been corrected, whereas restoration implies that the power was restored but it may have been through some means other than a repair, for example through switching. See also image restoration.

Restoration time: The time when the major portion of the interrupted load has been restored and the emergency is considered to be ended. However, some of the loads interrupted may not have been restored due to local problems.

Restore functions. : The ability to control the damage that results from an attack and to restore the protected information environment. (aus)

restore instruction : restore instruction an assembly language instruction that restores the machine state of a suspended process to the active state.

Restricted Approach Boundary: An approach limit at a distance from an exposed live part within which there is an increased risk of shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the live part.

Restricted-universe census: This is the complete enumeration of data from a specifically defined subset of entities including, for example, those that exceed a given level of sales or generator nameplate capacity.

Restriction: A reduced cross sectional area in a line or passage producing a pressure drop.

Restructuring: The process of replacing a monopoly system of electric utilities with competing sellers, allowing individual retail customers to choose their electricity supplier but still receive delivery over the power lines of the local utility. It includes the reconfiguration of the vertically-integrated electric utility.

restructuring : The reconfiguration of the vertically-integrated electric utility.

retail: Sales covering electrical energy supplied for residential, commercial, and industrial end-use purposes.

retail company : A company that is authorized to sell electricity directly to industrial, commercial and residential end-users.

retail competition : A system under which more than one electric provider can offer to sell to retail consumers, and retail consumers are allowed to choose more than one provider from whom to purchase their electricity.

Retail motor gasoline prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index.

Retail sales (electric): Sales made directly to the customer that consumes the energy product.

retail transaction : The sale of electric power from a generating company or wholesale entity to the consumer.

Retail wheeling: The process of moving electric power from a point of generation across third-party-owned transmission and distribution systems to a retail customer.

Retailer: A firm (other than a refiner, reseller, or reseller/retailer) that carries on the trade or business of purchasing refined petroleum products and reselling them to ultimate consumers without substantially changing their form.

Retained earnings: The balance, either debit or credit, of appropriated or unappropriated retained earnings of the utility department arising from earnings.

retiming : retiming the technique of moving the de-lays around the system. Retiming does not

alter the latency of the system.

Retire from service: A vehicle is retired from service if that vehicle is placed out of service and there are no future plans to return that vehicle to service.

retire unit : retire unit in modern CPU implementations, the module used to assure that instructions are completed in program order, even though they may have been executed out of order.

Retired hydropower plant sites: The site of a plant that formerly produced electrical or mechanical power but is now out of service. Includes plants that have been abandoned, damaged by flood or fire, inundated by new reservoirs, or dismantled.

retrace blanking : retrace blanking blanking of a display during vertical retrace to prevent the retrace line from showing on the display.

retrace switch : retrace switch electronic method used to blank a display during retrace blanking.

retrace time : retrace time amount of time that a blanked vertical retrace takes for a display device. Note that this time is less than the time the display is blanked.

Retransmission. : The repetition of a message, which was previously transmitted by any mode of communications.

retrograde channel : retrograde channel for a MOSFET semi-conductor device, the channel region whose doping is less at the surface of the channel than it is at some depth below the surface.

Retroreflective: Detection method where light from the emitter is aimed at, and reflected back to the receiver, from a retroreflective target.

retry : retry a repetition of an operation, disturbed by a transient fault, to obtain good result.

return address : return address the address of an instruction following a Call instruction, where the program returns after the execution of the Call subroutine.

Return Filter: A filter that cleans the hydraulic oil of an operating hydraulic system before it returns to the system's storage tank.

return instruction : return instruction an instruction, when executed, gets the address from the top of the stack and returns the program execution to that address.

Return Line: A passage that is used to route fluid to a reservoir or tank after use in some function. Normally limited to low pressures of 0 150 psig, but may be higher in special applications if so designed.

Return Loss: Noise or interference cause by impedance of a cable expressed in decibels.

return loss : return loss usually expressed in decibels, it is the magnitude of the reflection coefficient; the return loss is a measure of the power reflected due to impedance mismatch of an antenna or other device.

Return on common equity: The net income less preferred stock dividends, divided by the average common stock equity.

Return on common stock equity: An equity's earnings available for common stockholders calculated as a percentage of its common equity capital.

return stroke: The neutralising and main stroke in a lightning strike.

return stroke : return stroke in lightning, the upward propagating high-current, bright, potential discontinuity following the leader that discharges to the ground some or all of the charge previously deposited along the channel by the leader.

reusability : reusability the possibility to use or easily adapt the hardware or software developed for a system to build other systems.

Reusable Filter: Type of filter element that can be cleaned in solvent and used again.

reuse : reuse programming modules are reused when they are copied from one application program and used in another. Reusability is a property of module design that permits reuse.

reuse ratio : reuse ratio the ratio of the physical distance between the centers of radio communication cells and the nominal cell radius. This term is usually used with reference to the reuse of particular radio channels (e.g., cochannel reuse ratio).

revenue: The total amount of money received by an organisation from sales of its products and/or services, gains from the sales or exchange of assets, interest and dividends earned on investments, and other increases in the owner's equity except those arising from capital adjustments.

Revenue - (electricity): The total amount of money received by an entity from sales of its products and/or services; gains from the sales or exchanges of assets, interest, and dividends earned on investments; and other increases in the owner's equity, except those arising from capital adjustments.

Revenue requirement: The total revenue that the utility is authorized an opportunity to recover, which includes operating expenses and a reasonable return on rate base.

reverberation : reverberation inhomogeneities, such as dust, sea organisms, schools of fish, and sea mounds on the bottom of the sea, form mass density discontinuities in the ocean medium. When an acoustic wave strikes these inhomogeneities, some of the acoustic energy is reflected and reradiated. The sum total of all such reradiations is called reverberation. Reverberation is present only in active sonar, and in the case where the object echoes and is completely masked by reverberation, the sonar system is said to be "reverberation-limited."

reverse bias: A dc voltage applied to a pN junction so that the positive terminal of the voltage source connects to the N-type material and the negative terminal to the p-type material. It produces reverse current in the circuit.

reverse breakdown : reverse breakdown the diode operating region in which significant current flows from cathode to anode, due to an applied voltage exceeding the breakdown voltage.

reverse breakdown region: reverse breakdown region the region of the I-V curve(s) of a device in which the device is operating in avalanche or zener breakdown.

reverse conducting thyristor (RCT) : reverse conducting thyristor (RCT) a variety of asymmetric silicon controlled rectifier in which the diode is integrated into the thyristor structure.

Reverse Engineering: Reverse engineering is the process of measuring and analyzing the characteristics and operation of a product. Reverse engineering is often used to make copies of a product for which a design does not exist or to determine how a competitor's product works the way it does. The process of reverse engineering makes use of 3D scanning processes and computer modeling to recreate the product of interest.

reverse engineering : reverse engineering the reverse analysis of an old application to conform to a new methodology.

reverse generation-recombination current : reverse generation-recombination current part of the reverse current in a diode caused by the generation of hole-electron pairs in the

depletion region. This current is voltage-dependent because the depletion region width is voltage-dependent.

reverse isolation : reverse isolation device or circuit loss in a path that is the reverse of the path normally desired, expressed as the power ratio in deci-bels of the RF power delivered to a load at the input port versus the RF power incident at the output port. The negative sign results from the term “loss.”

reverse leakage current : reverse leakage current a nondestructive current flowing through a capacitor subjected to a voltage of polarity opposite to that normally specified.

Reverse Osmosis Membrane: A reverse osmosis water system is a device used to filter water in both residential and commercial/industrial applications. In a reverse osmosis system, the water is passed through a membrane to separate the dissolved particles (solute) in the water from the pure water (solvent). Reverse osmosis systems are used by the military to make potable water throughout the world and as part of the process in turning salt water into drinking water. Reverse osmosis membranes are designed to fit specific systems and deliver different levels of filtration performance.

Reverse Osmosis Water System: A reverse osmosis water system is a device used to filter water in both residential and commercial/industrial applications. In a reverse osmosis system, the water is passed through a membrane to separate the dissolved particles (solute) in the water from the pure water (solvent). Reverse osmosis systems are used by the military to make potable water throughout the world and as part of the process in turning salt water into drinking water.

Reverse Polarity Protection: Internal circuitry that protects a device from being ruined if proper polarity of voltages is not maintained when wiring the device.

reverse saturation current : reverse saturation current reverse current in a diode caused by diffusion of minority carriers from the neutral regions to the depletion region. This current is almost independent of the reverse voltage.

reverse voltage : reverse voltage the voltage across the device when the anode is negative with respect to the cathode.

reversible : reversible a motor capable of running in either direction, although it may be necessary to rewire the connections to the motor to change the direction of rotation. See also reversing.

reversible loss : reversible loss a decrease in magnetic induction (B) of a permanent magnet when subjected to thermal or magnetic demagnetization that is fully recovered (without remagnetization) when the detrimental conditions are removed.

Reversible Output Current: An output current which reverses polarity in response to a change of sign or direction of the measurand.

reversible temperature coefficient : reversible temperature coefficient for permanent magnets, a quantity that indicates the reversible change in magnetic induction with temperature.

Reversible turbine: A hydraulic turbine, normally installed in a pumped-storage plant, which can be used alternatively as a pump or as an engine, turbine, water wheel, or other apparatus that drives an electrical generator.

reversing : reversing a motor that can be run in either direction through the use of suitable switches or contactors.

Reversing Block: Part of a grease system that changes the flow of grease from one direction to the other after a predetermined pressure has been met.

Reversing Mill: Any rolling mill in which the direction of rotation of the rolls can be reversed at will. Heavy primary mills for bloom and slab rolling are the most common, but others, including some cold rolling mills, are also made to reverse.

reversing motor starter : reversing motor starter a motor controller capable of accelerating a motor from rest to normal speed in either direction of rotation. Some reversing motor starters can go directly from forward to reverse (or vice versa), while others must be stopped before a reversal of direction can take place. Both electromechanical and electronic reversing starters are available.

Revert: Recycled sprues, gates, risers, defective castings and machine chips.

Revisions and additions (gross change in reserves): The difference (plus or minus) between the year-end reserves plus production for a given year and the year-end reserves for the previous year.

revolute joint : revolute joint a joint characterized by a rotation angle that is the relative displacement between two successive links.

revolving field : revolving field the magnetic field created by flow of a set of balanced three-phase currents through three symmetrically displaced windings. The created field revolves in the air-gap of the machine at an angular velocity corresponding to the synchronous speed of the machine. The revolving field theory is the basis of functioning of synchronous and induction machines.

Rewind: A coil that needs to be reprocessed on a side trimmer.

rewirable fuse: It is a semi-enclosed simple fuse which can be re-wired. It consists of a short length of wire, generally of tinned copper.

Rework: Coil that will be reprocessed. Also Reclean, Reroll, and Reanneal.

Reynolds number : Reynolds number a nondimensional parameter used to determine the transition to turbulence in a fluid flowing in pipes or past surfaces.

Reynolds Numbers: Used in hydraulics and in casting gating theory. A dimensionless value (dynamic viscosity / density) describing the fairly sudden shift of flow from laminar to turbulent. $Re > 2000$ represents turbulent flow. Laminar flow is seldom experienced in runner and gating systems.

RF: Fixture wire, code or latex rubber-insulation and braid over solid or stranded conductor. 60°C

RF amplifier : RF amplifier amplifier capable of providing gain at radio frequencies.

Rf Backbone: Hardware and Software which enables real time tracking of inventory by receiving the signal from the scanners and transmitting it to the DEC computer. It includes the scanners, relay base stations, links to the computer and all required software to operate the system.

RF choke : RF choke a large-valued inductor that exhibits a large reactance at the operating frequency that effectively blocks the RF signal.

RF input power : RF input power the difference between incident power and reflected power at the input into a device or circuit, expressed in watts. The specific point in the design at which RF input power will be measured is important, since it will affect gain and efficiency calculations.

RF output power : RF output power the difference in the power available under perfectly matched conditions and the reflected power taking the output return loss into account, expressed in watts. This is the RF power delivered to the load.

RF quadrature : RF quadrature part of a radio frequency receiver that contains circuits that can be tuned/varied to pass a desired signal carrier wave while rejecting other signals or carriers.

RF quadrature demodulation : RF quadrature demodulation radio frequency demodulation of a signal that was produced by two signals separated in phase by 90 degrees.

RF quadrature modulation : RF quadrature modulation radio frequency modulation of a signal that is produced by two signals separated in phase by 90 degrees.

RF tuner : RF tuner the part of a radio frequency receiver that contains circuits that can be tuned/varied to pass a desired signal carrier wave while rejecting other signals or carriers.

RFG: See Reformulated Gasoline.

RFH: Same as RF, but rubber or latex rubber insulation heat-resistant. 75°C

RFI: (Radio Frequency Interference) Electrical Noise

RFIC : RFIC See radio frequency integrated circuit.

RGB : RGB the most widely used image representation, where color is represented by the combination of the three primary colors of the additive light spectrum (See also tristimulus value). The RGB space is represented in Cartesian coordinates as a unit cube, where the origin represents black and the point .1; 1; 1/ represents white. See also color space.

Rh: Chemical symbol for Rhodium

RH: Rubber-insulated, heat resistant building wire. 75°C

RH/RW: Rubber-insulated, heat and moisture resistant building wire. 75°C dry, 60°C wet.

RHD: Rubber-insulated, twin conductor, heat-resistant, fibrous covered wire.

RHDL: Same as RHD, except lead instead of fibrous covered.

rheobase : rheobase the minimum current necessary to cause nerve excitation — applicable to a long duration current (e.g., several milliseconds).

Rheostat: A two-terminal resistor with an adjustable center connection and one end connection generally used to control current.

rheostat: An adjustable resistor constructed so that its resistance may be changed without opening the circuit.

Rheostat: An adjustable resistor constructed so that its resistance may be changed without opening the circuit.

RHH: A rubber or XLPE insulated conductor designed to be used at operating temperatures up to 90 degrees Celsius in dry locations.

RHH: Rubber-insulated, heat-resistant building wire. 90°C

RHH-2: A rubber or XLPE insulated, moisture resistant conductor designed to be used at operating temperatures up to 90 degrees Celsius in dry and wet locations.

RHL: Same as RHH, but with lead sheath overall.

RHM: Rubber-insulated multiple conductors, heat-resistant and overall fibrous covered.

RHML: Same as RHM, but with lead cover overall.

Rhodium: Chemical symbol Rh. A silver white metal found in nickel deposits.

RHW: Rubber-insulated building wire, heat and moisture-resistant. 75°C dry or wet.

Ri, ring indicator : An RS-232 modem interface signal (sent from the modem to the DTE on

pin 22) which indicates that an incoming call is present.

Rib: An elongated projection on a shape, forging or casting to provide stiffening.

rib waveguide : rib waveguide a type of dielectric waveguide formed by several planar layers of dielectric media; the upper layer, instead of being planar, presents a ridge (rib) where the field is mostly confined. Used in integrated optics.

Ribbing A Coating: A coating defect consisting of a flow mark defect with an appearance similar to corduroy fabric. Ribbing usually occurs when the flow marks (ribs), from application on the coater, do not flow out and level the surface of the coating.

Ribbon: A thin sheet of crystalline or multi-crystalline material, such as silicon, produced in a continuous process by withdrawal from a molten bath of the parent material.

Ribbon Cable: A cable consisting of two or more conductors laid parallel in one plane and held in place by some means.

Ribbon silicon: Crystalline silicon that is used in photovoltaic cells. Ribbon silicon is fabricated by a variety of solidification (crystallization) methods that withdraw thin silicon sheets from pools of relatively pure molten silicon.

Ribbon Wound: A term applied to a common method of winding strip steel layer upon layer around an arbor or mandrel.

Rice distribution : Rice distribution the probability distribution of the magnitude of a complex quantity whose real and imaginary parts are independent Gaussian random variables with nonzero mean. Frequently used to approximate multipath fading statistics in line-of-sight mobile radio systems.

Rice factor : Rice factor for a Rice-distributed signal, the parameter giving the ratio of the power of the static (direct) signal component to the power of the remaining signal components. The remaining signal components (which follow a Rayleigh distribution) are often referred to as the diffuse signal. The Rice factor is a parameter of the Rician probability density function. See also fading Rician.

Ridge Pin: A device that allows the mounting of a pin type insulator to a pole. The ridge pin is bolted to the top of the pole and the insulator is screwed onto the threads at its top.

Riffles: Waviness at the edge of sheet or strip.

Rigging: Gates, risers, loose pieces, etc., needed on the pattern to produce a sound casting.

Right-of-way: The land and legal right to use and service the land along which a transmission line is located. Transmission line right-of-way is usually acquired in widths that vary with the kilovolt (kV) size of the line.

Right-of-way (electric): A corridor of land on which electric lines may be located. The Transmission Owner may own the land in fee, own an easement, or have certain franchise, prescription, or license rights to construct and maintain lines. See NERC definition.

rigid body motion : rigid body motion motion of bodies that are assumed not to change their shape at all, i.e., deformation is absent or is neglected. In contrast, non-rigid body motion takes deformation into consideration.

Rigid Flange Couplings: Rigid Flange Couplings are commonly employed in the assembly of large, straight shafts where tight tolerances on alignment must be maintained. These couplings are very common in the power transmission industry and are made up of two separate flanged halves that are bolted together. The halves are keyed to the shaft with tapered keys to ensure proper alignment and a tight fit. A rigid flange coupling is often employed in

situations where a strong coupling is required, but little axial distance is available.

Ring: One of the two conductors or cable pair in a telephone circuit.

ring bus : ring bus a power transmission scheme in which a region is supplied by a continuous, closed loop of power transmission lines.

ring circuit: Each circuit commences from consumer unit (or distribution board) through an MCB (or fuse) of specific rating usually 30 A, loops into each socket outlet and returns to the same MCB (or fuse) in the consumer unit (distribution board). Looping must be done for the live conductor, neutral conductor and the protective conductor in separate rings. The ring method of connection is done only for the 13 A socket outlets, as the individual 13A plugs are separately having fuses (fuses may be usually rated at 13 A or 3 A depending on the type of load).

ring coupler : ring coupler a type of planar 180 degree hybrid that can easily be constructed in planar (micro strip or stripline) form.

ring network : ring network a network topology where all nodes are connected in a loop. The topology is resilient to breaks in the loop as traffic can be rerouted in either direction. Also known as loop network.

ring numbering : ring numbering for access control, protection scheme in which every memory object is assigned a set of ring numbers and every executing process is assigned a number. The legality of an access attempt is determined by numeric comparisons between the execution ring number and the ring numbers of the object to be accessed. A typical design assigns more privilege to lower numbers, where the system programs reside. If there are three access modes (execute, read, write), three numbers e ; r ; w are assigned to each object. Let p denote the ring number of the executing process. Then execute is permitted if $p < e$, read if $p < r$, and write if $p < w$. This scheme is simple to explain, but does not support general access control policies, since they cannot be mapped to a linear sequence of integer values.

ring resonator : ring resonator resonator in which for much of the mode volume the electromagnetic waves are described in terms of travelling rather than standing waves. Since the ring has no open ends, radiative losses are very small. In such a resonator, the mode volume of the electromagnetic waves are described in terms of travelling rather than standing waves.

Ring. : (in lan technology) a closed loop network topology; contrast with bus and star.

ringing : ringing (1) the phenomena in discrete-time (sampled data) systems in which a system containing a single pole on the negative real axis in the z -plane can oscillate with a period of twice the sampling interval. Mathematically, this discrete effect can be related back to the discontinuity that exists along the negative real axis in the z -plane.(2) in image processing, the occurrence of ripples near edges in an image processed by a lowpass filter with a steep transition band.

Rip: Defect indicating the edge of the strip has been torn and yet is still attached to the strip.

Rip rap: Cobblestone or coarsely broken rock used for protection against erosion of embankment or gully.

Ripple: The small amount of ac voltage that still remains in the output of a dc power supply.

Ripple: With steady state input conditions, the peak to peak value of the fluctuating component of the output.

ripple: A fluctuation in the intensity of a steady current or voltage.

ripple : ripple the AC (time-varying) portion of the output signal from a rectifier circuit.

Ripple (Defect): A slight transverse wave or shadow mark appearing at intervals along the piece.

Ripple Content of the Output: The magnitude of AC fluctuation in a DC signal, after filtering. Ripple is usually expressed as a percentage of rated output.

ripple current: ripple current the total amount of alternating and direct current that may be applied to an electrolytic capacitor under stated conditions.

ripple-carry adder : ripple-carry adder a basic n-bit adder that is characterized by the need for carries to propagate from lower- to higher-order stages.

RISC : RISC See reduced instruction set computer processor.

rise time: Usually defined as the time taken for the leading edge of a pulse or waveform to rise from 10% to 90% of its final value.

rise time : rise time degradation a measure of the slowing down of the pulse as it passes through an I&P element. It includes both the increase in risetime of the pulse, as well as loss in amplitude.

rise time degradation : rise time the time required for a digital signal to make the transition from a "low" value to a "high" value.

Riser: A riser is a power line pole that connects an overhead system to an underground system. A riser has a conduit from the ground up the pole where potheads are used to connect to the overhead lines.

Riser: The conduit path between floors of a building.

Riser Distance: The length of the riser neck. The term is applied to side risers only.

Riser Gating: Practice of running metal for the casting through the riser to help directional solidification.

Riser Height: The distance from the top of the riser when liquid to the top of the riser neck. Riser height when solid is usually several inches less than when liquid because of contraction and loss of feed metal to the casting.

Riser Neck: The connecting passage between the riser and casting. Usually only the height and width or diameter of the riser neck are reported, although the shape can be equally important.

Riser Pad (Riser Contact): An enlargement of the riser neck where it joins the casting. The purpose of the pad is to prevent the riser from breaking into the casting when it is struck or cut from the casting.

Riser Pole: A pole used to transition from overhead and underground cables.

rising edge : rising edge in a clock or data signal, that portion of the signal that denotes the change from the "low" state to the "high" state.

Risk (1).: The possibility that a particular threat will exploit a particular vulnerability of a data processing system.

Risk (2). : Acceptable level of risk - a judicious and carefully considered assessment by the appropriate daa that an information technology (cis) activity or network meets the minimum requirements of applicable security directives. The assessment should take into account the value of cis assets; threats and vulnerabilities; countermeasures and their efficiency in compensating for vulnerabilities; and operational requirements. (based on opnavinst 5239.1a)

Risk (3).: Residual risk - the portion of risk that remains after security measures have been

applied. (nato)

Risk management. : See security risk management.

River (method of transportation to consumers - coal): Shipments of coal moved to consumers via river by barge. Shipments to Great Lakes coal loading docks or Tidewater pier or coastal points are not included.

RJ: Rubber-insulated and jute covered cable.

RJ (Registered Jack): Telephone and data jack applications registered with FCC.

RJ-11: Registered Jack 11. Standard telephone connector which has a tab that snaps into the socket and must be pressed to be removed from telephone or socket. Usually houses two wires but is capable of housing up to four.

RJ-45: Registered Jack 45. Connectors used to connect computers to LANs or phones with many lines. It is able to house up to 8 wires that is twice as many wires as the RJ11.

Rje, remote job entry. : Submission of batch processing jobs through an input device (such as an IBM model 3780) that has access to a computer through a data link.

RJFJ: Rubber-insulated cable with flat band armor.

RJIJ: Rubber-insulated cable with interlock armor.

RL: Rubber-insulated cable with lead sheath.

RLJFJ: Rubber-insulated cable with lead, jute, flat band armor and overall jute overing.

RLJWJ: Rubber-insulated cable with lead, jute, steel wire armor and overall jute covering.

Rlsd, received line signal detector. : See cd; also called dcd.

RM: Rubber-insulated multiple conductors with fibrous covering.

RML: Same as RM, but lead instead of fibrous covering.

RMS: See "RootMeanSquare".

RMS Root mean square: The value of an ac sine wave that indicates its equivalent dc value for producing heat. Also called the effective value, it is equal to 70.7% of the maximum value (peak value) for the waveform.

rms value or root-mean-square value: The rms value of a periodic waveform is obtained by taking the square root of the mean of the squared waveform. It is also the same as the effective value of the waveform. For a.c. waveforms, unless otherwise specified, it is always the rms value that is specified.

RMU: Ring Main Unit.

Ro, read-only. : A teleprinter receiver without a transmitter. Compare with asr and ksr.

Road oil: Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

robot : robot a term originated from the Czech word robota, meaning work. A definition used by the Robot Institute of America gives a more precise description of industrial robots: "A robot is a re-programmable multifunctional manipulator designed to move materials, parts, tools, or specialized devices, through variable programmed motions for the performance of a variety of tasks." The British Robot Association defines a robot as "A reprogrammable device designed to both manipulate and transport parts, tools or specialized manufacturing implements through variable programmed motions for the performance of specific manufacturing tasks."

robot programming language : robot programming language a computer programming

language that has special features which apply to the problems of programming manipulators. Robot programming is substantially different from traditional programming. One can identify several considerations that are typical to any robot programming method: The objects to be manipulated by a robot are three-dimensional objects; therefore, a special type of data is needed to operate an object. Robots operate in a spatially complex environment. The description and representation of three-dimensional objects in a computer are imprecise. Also, sensory information has to be monitored, manipulated, and properly utilized. Robot programming languages can be divided into three categories:

robot vision : robot vision a process of extracting, characterizing, and interpreting information from images of a three-dimensional world. This process is also called as machine or computer vision.

robot-oriented programming : robot-oriented programming using a structured programming language that incorporates high-level statements and has the characteristics of an interpreted language, in order to obtain an interactive environment allowing the programmer to check the execution of each source program statement before proceeding to the next one. Robot-oriented programming incorporates the teaching-by-doing method, but allows an interaction of the environment with physical reality. See also teaching-by-showing programming.

robust control : robust control control of a dynamical system so that the desired performance is maintained despite the presence of uncertainties and modeling inaccuracies.

robust controller design : robust controller design a class of design procedures leading to control systems that are robust in the sense of required performance. Robust design is a feedback process involving robustness analysis. A specific technique used in robust controller design depends on the type of model describing a system and its uncertainty, control objective, and a set of admissible controllers. The first requirement is to ensure robust stability; this could be followed by guaranteed cost, disturbance rejection, robust poles localization, target sets or tubes reachability, or other demands.

robust estimation : robust estimation an estimation scheme in which we optimize performance for the least favorable statistical environment among a specified statistical class.

robust fuzzy controller : robust fuzzy controller a fuzzy controller with robustness enhancement or robust controller with fuzzy logic concepts.

robust fuzzy filter : robust fuzzy filter a fuzzy filter with robustness enhancement or robust filter with fuzzy logic concepts.

robust stability : robust stability a property of the family of models for the system with uncertainty which ensures that it remains stable for all possible operating conditions for uncertain variables ranging over their sets. For time-invariant linear systems with uncertainty, robust stability means that the family of characteristic polynomials generated by uncertain parameters defined over the operating sets has all roots endowed with negative real parts. See Kharitonov theorem. For nonlinear systems, robust stability could be checked by some techniques based on direct Lyapunov method or Popov criterion. In some cases, the requirement of robust asymptotic stability may be weakened by more realistic practical stability or ultimate boundedness demand. See also practical stabilization.

robust statistics : robust statistics the study of methods by which robust measures may be extracted from statistical or numerical data, thereby excluding measurements which are

unlikely to be reliable and weighting other measurements appropriately, thereby increasing the accuracy of finally assessed values. Of specific interest is the systematic elimination of outliers from the input data. See also robustness, median filter .

robustness : robustness (1) a control system quality of keeping its properties in the admissible range in spite of disturbances and other environmental perturbations as well as uncertainties in the system model. The most frequent requirements deal with robust stability and robust performance expressed, for example, in terms of guaranteed cost. Robust systems have the property of being insensitive to changes in the model parameters as well as external disturbances. Usually the system robustness is reached via robust controller design, although systems could be robust in some sense (for example, robustly stable) without use of any special design techniques. It is, for example, well known that for the majority of real-world plants, standard PID controller suitably tuned ensures sufficient robustness. Nevertheless, in many situations, robustness can be guaranteed only by sophisticated design techniques such as H infinity design, min-max control, practical stabilization, guaranteed cost control, and others. (2) the property of a process that results in its being able to suppress the effects of noisy or unreliable data, thereby arriving at reliable measures or interpretations, and degrading gracefully as more and more unreliable data is included. With image data, robust procedures are those which are able to detect objects without becoming confused by partial occlusions, noise, clutter, object breakages, and other distortions.

Rock Candy Fracture: A fracture that exhibits separated grain facets, most often used to describe intergranular fractures in large grained metals.

Rocker Switch: A switch that is operated by a paddle type actuator such as a decorator switch.

Rockwell Hardness Testing: Measure of resistance to penetration when material is exposed to a pointed load. The hardness numbers obtained by a Rockwell machine are related to the depth of the impression measured after the load is applied. See hardness

ROCOF: Rate of Change of Frequency.

Rod: Round, thin semi finished steel length that is rolled from a billet and coiled for further processing. Rod is commonly drawn into wire products or used to make bolts and nails. Rod trains (rolling facilities) can run as fast as 20,000 feet per minute D1more than 200 miles an hour.

Rod: The solid round metallic form of copper and aluminum which is the most effective shape from which to draw wire.

Rod Mill: (1) A mill for fine grinding, somewhat similar to the ball mill, but employing long steel rods instead of balls as the grinding medium. (2) A mill for rolling metal rod.

Rod Side Pressure: Pressure applied to the back side of the head of a cylinder ram or shaft that supplies less force than the blank side pressure.

Rodding: Reinforcing the sand in a core with metal rods or shapes to strengthen parts of the core.

Rodlet or GAD basket: An open garbage and debris (GAD) basket that may have contain pieces of fuel rods, disassembled fuel rods, and other fuel and nonfuel components.

Roll Force Systems: Mill stands place considerable pressure on slabs, blooms and coils to further process the material. There are two general ways of applying the force to the steel D1screw and hydraulic systems. SCREW (INCLINE PLANE) This older method used the basic principle of the screw to adjust the space between the mill rolls. Because metal touches

metal, these configurations will wear down over time and can cause quality problems.

HYDRAULIC (PANCAKE CYLINDER) This modern system uses fluid pressure to rapidly adjust the roll spacing several times per second. These minute, instantaneous adjustments allow for superior gauge tracking and higher quality products.

Roll front: A type of uranium deposition localized as a roll or interface separating an oxidized interior from a reduced exterior. The reduced side of this interface is significantly enriched in uranium.

Roll Grind: The uniform ground finish on the work rolls which is imparted to the sheet or plate.

Roll In Metal: An extraneous chip or particle of metal rolled into the surface of the product.

Roll Scale: Oxide of iron which forms on the surface of steel while it is being heated and rolled. Much of the scale is cracked and loosened during the rolling operation and may fall off the piece naturally or be blown off by high pressure water sprays or other means.

Rolled Edges: Finished edges, the final contours of which are produced by side or edging rolls. The edge contours most commonly used are square corners, rounded corners and rounded edges.

Rolled Ring: See ?Forging, Rolled ring?.

Roller Flattening: The process in which a series of staggered rolls of small diameter is used to remove bow and waves

Roller Level: appreciable reduction in gauge.

Rolling Direction (In Rolled Metal): The direction, in the plane of the sheet, perpendicular to the axes of the rolls during rolling.

Rolling Ingot: A cast form suitable for rolling. See ?Fabricating Ingot?.

Rolling Lap: A fault arising from the overfilling or mis alignment of rolls, the result is a bulge on the baaar which is rolled into the metal and is lapped over. It remains throughout subsequent working and appears as a longitudinal crack.

Rolling Mandrel: In ring rolling, a vertical roll of sufficient diameter to accept various sizes of ring blanks and to exert rolling force on an axis parallel to the main roll.

Rolling Mills: Equipment used for rolling down metal to a smaller size or to a given shape employing sets of rolls the contours of which determine or fashion the product into numerous intermediate and final shapes, e.g., blooms, slabs, rails, bars, rods, sections, plates, sheets and strip.

Rolling Over: The operation of reversing the position of a flask. If the drag part of the pattern has been rammed with the parting surface downward, it is rolled over 180 degrees to allow core setting and placement of cope.

Rolling Slab: A rectangular semi finished product, produced by hot rolling fabricating ingot and suitable for further rolling.

Rolling Ticket: The order matte, order paper, and mill order paper; tells how coil should be rolled or processed.

Rollover Board: A wood or metal plate on which the pattern is laid top face downward for ramming the drag half mold, the plate and half mold being turned over together before the joint is made.

Rollover Machine: A molding machine with which the flask is rolled over before the pattern is drawn from the mold.

ROM : Read only memory.

rom, read-only memory. : Nonvolatile semiconductor storage device manufactured with predefined contents. Compare with eprom, prom and ram.

Romex: Non-Metallic Sheath Cable

Romex cable : Romex cable a heavily insulated, non-armored cable used in residential wiring.

Roof (coal): The rock immediately above a coal seam. The roof is commonly a shale, often carbonaceous and softer than rocks higher up in the roof strata.

Roof insulation: Insulating materials placed underneath the roof or on the roof (building).

Roof or ceiling insulation: A building shell conservation feature consisting of insulation placed in the roof (below the waterproofing layer) or in the ceiling of the top floor in the building.

Roof or ceiling insulation, insulation in exterior walls: Any material that when placed between the interior surface of the building and the exterior surface of the building, reduces the rate of heat loss to the environment or heat gain from the environment. Roof or ceiling insulation refers to insulation placed in the roof or ceiling of the top occupied floor in the building. Wall insulation refers to insulation placed between the exterior and interior walls of the building.

Roof pond: A solar energy collection device consisting of containers of water located on a roof that absorb solar energy during the day so that the heat can be used at night or that cools a building by evaporation at night.

Roof-bolting machine, or roof bolter: , is used to drill holes and place bolts to support the mine roof. Roof bolting units can be installed on a continuous mining machine.

Roofing Sheet: Coiled or flat sheet in specific tempers, widths and thickness suitable for the manufacture of corrugated or v crimp roofing.

Room air conditioner: Air-conditioning units that typically fit into the window or wall and are designed to cool only one room.

Room heater burning gas, oil, and kerosene: Any of the following heating equipment circulating heaters, convectors, radiant gas heaters, space heaters, or other nonportable room heaters that may or may not be connected to a flue, vent, or chimney.

room index K: Code number, representative of the geometry of a room, used in calculation of the utilization factor or the utilance. The room index is usually given by the formula $K = (l \times b)/h(1 + b)$ where l is the length of the room, b is the width and h is the distance of the luminaires above the working plane.

room-and-pillar mining: system, the most common method, the mine roof, is supported mainly by coal pillars left at regular intervals. Rooms are places where the coal is mined; pillars are areas of coal left between the rooms. Room-and-pillar mining is done either by 1) conventional mining, which involves a series of operations that require cutting the working face of the coalbed so that it breaks easily when blasted with explosives or high-pressure air, and then loading the broken coal or 2) continuous mining, in which a continuous mining machine extracts and removes coal from the working face in one operation. When a section of a mine has been fully developed, additional coal is extracted by mining the supportive pillars until the roof caves in; the procedure is called room-and-pillar retreat mining.

Room-and-pillar mining: The most common method of underground mining in which the

mine roof is supported mainly by coal pillars left at regular intervals. Rooms are places where the coal is mined; pillars are areas of coal left between the rooms. Room-and-pillar mining is done either by conventional or continuous mining.

Root Diameter: See minor diameter.

root locus : root locus the trajectory of the roots of an algebraic equation with constant coefficient when a parameter varies.

Root Mean Square: The effective value of an alternating periodic voltage or current.

root mean square value: [see rms value]

Root-Mean Square or Effective Value: The square root of the mean of the squares of the instantaneous values for one complete cycle. It is usually abbreviated r.m.s. Unless otherwise specified, the numerical value of an alternating current refers to its r.m.s. value. The r.m.s. value of a sinusoidal wave is equal to its maximum, or peak value, divided by square root of 2

Root-Mean-Square: The effective value of alternating current or voltage. The RMS value equates an AC current or voltage to a DC current or voltage that provides the same power transfer.

Root-Mean-Square: The device to determine the routes that a packet must take upon arrival at its input line. It decides the routes dynamically or statically and operates in network layer.

root-mean-squared delay spread : root-mean-squared delay spread a measure of the width of a delay power spectrum. Computed for the delay power spectrum in a similar fashion as the standard deviation is computed for a probability density function. Usually known as RMS delay spread.

root-mean-squared Doppler spread : root-mean-squared Doppler spread a measure of the width of a Doppler power spectrum. Computed for the Doppler power spectrum like the standard deviation is computed for a probability density function. Also known as RMS Doppler spread.

root-mean-squared phase ripple : root-mean-squared phase ripple the difference of the root-mean-squared (RMS) values of the phase peaks and phase dips relative to a best fit linear phase response across a specified band.

root-mean-squared power : root-mean-squared power the average power, expressed in watts, delivered to the load over a complete period of time (T), as if the current and voltage were constant over that time period. Also known as RMS power or average power.

Rope Strand: A conductor composed of a center group of twisted strands surrounded by one or more layers of similar groups of twisted strands.

Rope. : An element of chaff consisting of a long roll of metallic foil or wire which is designed for broad-band, low-frequency response.

Rope-chaff. : Chaff which contains one or more rope elements. See also chaff, rope.

Rope-Lay Cable: A concentric stranded cable designed for flexibility with its individual members made up of strands which are either concentric stranded or bunched.

Roping: A rope like appearance in the rolling direction after the metal has undergone severe deformation

Rosin Powder: Powder used on reels to ensure a tight start and prevent slippage.

Rotary Actuator: An actuator is a mechanical device used to move one component relative to another. There is no one design for an actuator - they are designed specifically for the job they need to perform. Rotary actuators are used to drive the rotational motion of another

component.

Rotary Dimming: Is achieved through the rotation of a knob of any style to control the lighting level components.

Rotary Joint: A connector or fitting that is equipped with seals or o rings that allow it to rotate while passing one or more fluid paths through sealed internal passages.

Rotary Phase Converter: Converts an alternating current system of one or more phases to alternating current system of a different number of phases, but of the same frequency.

Rotary rig: A machine used for drilling wells that employs a rotating tube attached to a bit for boring holes through rock.

Rotary Shear (Slitting Machine): A cutting machine with sharpened circular blades or disc like cutters used for trimming edges and slitting sheet and foil. NOTE: cutter discs are also employed in producing circles from flat sheets but with differently designed machines.

Rotary Strainer: A second stage in line water filter for water delivered from the New Blowing Room Pump to the Blast Furnace. The strainer contains an electric driven rotary sieve that catches particulates and prevents them from entering the water system.

Rotary Variable Differential Transformer (RVDT): An electro mechanical rotary device that produces an analog signal in proportion to the difference in distance between a magnet and a separate fixed coil.

Rotary Variable Transformer (RVT): An electromechanical rotary device that produces an analog signal in proportion to the difference in velocity between a magnet and a separate fixed coil.

Rotary. : An arrangement of a group of lines, such as telephone or data pabx lines, that are identified by a single symbolic name or number; upon request, connection is made to the first available (free) line.

rotate : rotate a logical operation on a data element that shifts each bit one position to the left or right. The bit at the end of the location is transferred to the opposite end of the element.

rotating excitation system : rotating excitation system an excitation system derived from rotating AC or DC machines. The output of the system is still DC and connected to the rotor.

rotating wave approximation : rotating wave approximation assumption in a semiclassical model for the interaction of light with atoms that all populations, field amplitudes, and polarization amplitudes change negligibly within one optical cycle.

rotating-rectifier exciter : rotating-rectifier exciter an AC generator, with rotating armature and stationary field, whose output is rectified by a solid-state device located on the same shaft to supply excitation to a larger electrical machine, also connected to the same shaft.

rotational latency : rotational latency the time it takes for the desired sector to rotate under the head position before it can be read or written.

rotational loss : rotational loss one of several losses in a rotating electric machine that are primarily due to the rotation of the armature and include the friction and windage losses. Also called mechanical loss. They can be determined by running the machine as a motor at its rated speed at no load, assuming the armature resistance is negligible.

rotational position sensing : rotational position sensing a mechanism used in magnetic disks, whereby the disk interrupts the I/O controller when the desired sector is under the read/write head. Used to recognize the different sectors in a track and synchronize the

different bits in a sector.

rotational transition : rotational transition transition between rotational states of a molecule.

Rotman lens : Rotman lens a constrained cylindrical-lens antenna over a wide instantaneous band-width as derived by W. Rotman and P. Franchi (1980). The antenna configuration consists of a stripline lens and line feed. The lens layers can use a microstrip printed-circuit construction. Microstrip lines interconnect radiating elements.

rotor: The rotating cylindrical member of a machine, placed inside the stator with a narrow intervening air gap to allow for smooth rotation.

rotor : rotor the rotating part of an electrical machine including the shaft, such as the rotating armature of a DC machine or the field of a synchronous machine.

rotor power developed: rotor power developed the amount of power developed by the rotor. In DC machines, the developed power, frequently denoted by P_d , is calculated as the product of the induced EMF E_a and the armature current I_a . In induction machines, the rotor power developed is obtained by subtracting the rotor copper losses from the air gap power.

rotor power loss : rotor power loss represents the portion of the power transferred across the air gap to the rotor of an induction motor that is lost either through ohmic heating of the rotor windings or due to friction and windage losses in the rotor. The mechanical power available at the motor shaft is the difference between rotor power input and rotor power losses. See also rotor power input.

rotor reference frame : rotor reference frame a two-dimensional space that rotates at the electrical angular velocity of a specified machine rotor. In electric machines/power system analysis, an orthogonal coordinate axis is established in this space upon which fictitious windings are placed. A linear transformation is derived in which the physical variables of the system (voltage, current, flux) are referred to variables of the fictitious windings. See also Park's transformation,

rotor speed : rotor speed quantification of the rotational operation of the moving part of a rotating electrical machine. The rotor speed is measured either in SI units in radians per second (rad/s) or in practical units in revolutions per minute (rev/min).

Rotoweigh: An electronic scale mounted to the lifting block of a crane used to weigh scrap and coils. A weight readout is displayed on the side of the crane cab.

Rough Machining: Machining without regard to finish, usually to be followed by a subsequent operation.

rough surface : rough surface surface whose corrugation is random and appreciable compared with the light wavelength so as to produce light scattering. It is commonly characterized by the root mean square and the correlation length of the random height profile.

Roughing Stand: The first rolling stand through which metal passes during hot rolling. Once reduced by the roughing stands, the metal continues on to the finishing stands where smoother rolls with a smaller gap are used to complete the hot roll process.

Round robin retraining. : A method of training in which the receiving modem asks for a training pattern by sending a training pattern.

Round Strand: A conductor composed of a center group of twisted strands surrounded by one or more layers of similar groups of twisted strands.

Round test mesh: A sieving screen with round holes, the dimensions of which are of specific sizes to allow certain sizes of coal to pass through while retaining other sizes.

Round Wire: A wire circular in cross section as opposed to flat, square, etc.

rounding : round-robin arbitration a technique for choosing which of several devices connected to a bus will get control of the bus. After a device has had control of the bus, it is not given control again until all other devices on the bus have been given the opportunity to get control in a predetermined order. The opportunity to get control of the bus circulates in a predetermined order among all the devices.

round-robin arbitration : rounding an operation that modifies a floating-point representation considered infinitely precise in order to fit the required final format.

Common rounding modes include round to nearest, round toward zero, and round toward positive or negative infinity.

Roundwood: Wood cut specifically for use as a fuel.

Route: The system of transport for moving any piece of inventory from a source location to any destination includes the physical path as well as the mover/hauler chosen to transport.

Route diagram. : See map, line route/route diagram.

Router: Device utilized to route data from one local area network to another or to a phone line's long distance line.

router : router a node, connected to multiple networks, that forwards packets from one network to another. It is much more complex than bridges that work between networks having compatible protocols. Also called a gateway.

routine tests: Routine tests are conducted on each and every single equipment to ensure that each equipment meets a minimum standard of quality.

routing : routing given a collection of cells placed on a chip, the routing routine connects the terminals of these cells for a specific design requirement.

Routing indicator (ri). : See indicator, routing.

Routing line (message relay). : That procedure line which contains the routing indicators of the station to which a transmission is routed.

Routing line segregation. : A method of routing wherein the basic routing line of the message heading is altered as the message passes through each relay station involved, so that only those routing indicators pertinent to the onward transmission are left in the routing line (message format line 2).

Routing, alternative.: A method of routing traffic in which, when a call cannot be connected to a free circuit on the normal route, it is directed to an alternative route, either automatically or by an operator.

row decoder : row decoder logic used in a direct-access memory (ROM or RAM) to select one of a number of rows from a given row address. See also two-dimensional memory organization.

Royalties (coal): Payments from a lessee to the lessor, for the use of the lessor's coal resources. Payments are made in money or in for a stated share of production from the lessor's mineral deposits. Royalty rates may be expressed as an established minimum, a sliding-scale, or a step-scale. A step-scale royalty rate increases by steps as the average production on the lease increases. A sliding-scale royalty rate is based on average production and applies to all production from the lease.

Royalty: A contractual arrangement providing a mineral interest that gives the owner a right to a fractional share of production or proceeds there from, that does not contain rights and

obligations of operating a mineral property, and that is normally free and clear of exploration, developmental and operating costs, except production taxes.

Royalty cost: A share of the profit or product reserved by the grantor of a mining lease, such as a royalty paid to a lessee.

Royalty interest: An interest in a mineral property provided through a royalty contract.

Royalty interest (including overriding royalty): These interests entitle their owner(s) to a share of the mineral production from a property or to a share of the proceeds there from. They do not contain the rights and obligations of operating the property and normally do not bear any of the costs of exploration, development, and operation of the property.

RP: Performance grade rubber insulation, 60°C.

RPM: Reinforced Polymer Mortar. See "Polymer Concrete".

RPM: Revolutions Per Minute.

rpm : Speed of rotation of a machine expressed in revolutions per minute.

RR: Rubber insulation, neoprene jacket. See type USE

RS: Integral rubber insulation and jacket on single conductor cables.

RS-170A : RS-170A technical standard developed by the Electronics Industry Association that describes in detail the relationship between vertical, horizontal, and subcarrier components within a video signal. The standard permits synchronization of two or more video signals.

RS-232 port: This is a serial port. A method of communicating digital information in which the data bits are transmitted sequentially over one line.

Rs-232, rs-232-c. : Connecting data processing devices. Rs-232 defines the electrical characteristics of the signals in the cables that connect dte with dce; it specifies a 25-pin connector (the db-25 connector is almost universally used in rs-232 applications); and it is functionally identical to ccitt v24/v2(8).

rs-42(2). : An eia recommended standard for cable lengths that extended the rs-232 50foot limit. Although introduced as a companion standard with rs-449, rs-422 is most frequently implemented on unused pins of db-25 (rs-232) connectors. Electrically compatible with ccitt recommendation v11.

Rs-42(3). : An eia recommended standard for cable lengths that extended the rs-232 50foot limit. Although introduced as a companion standard with rs-422, rs-423 is not widely used. Electrically compatible with ccitt recommendation v10.

RS-422 : RS-422 technical standard developed by the Electronics Industry Association that defines the exact physical, electrical, and functional characteristics for a 40-pin connector that links a computer to communication equipment.

Rs-449. : An eia recommended standard for the mechanical characteristics of connectors; introduced as companion standard to rs-422 and rs-423 standards. Specifies two connectors connects (a 37-pin connector and a 9-pin connector); not widely used.

RSE: Relative Standard Error

RTO: Regional Transmission Organization.

RTS: Request to Send. An RTS is a message sent by a networked device to its access point, seeking permission to send a data packet.

RTS: Reverse twist secondary.

Rts, request-to-send. : An rs-232 modem interface signal (sent from the dte to the modem on pin 4) which indicates that the dte has data to transmit.

RTU: Remote Terminal Unit. An IED used specifically for interfacing between a computer and other devices. Sometimes may include control, monitoring, or storage functions.

Ru: Chemical symbol for Ruthenium

RU: Rubber-insulated, latex building wire. 60°C

Rub Mark: See ?Mark Rub?.

Rub Tool: A surface area showing a scratch or abrasion resulting from contact of the hot extrusion with the press equipment

Rubber Id's: Inserts used to change the center diameter (20 24 ID).

Rubber Roll: A roll in the line mainly used as a wringer roll or back up roll.

rubbers : rubbers personal protective wear for line workers, including insulating gloves, sleeves, and rubber boots.

ruby : ruby amplifying medium employed in the first man-made optical frequency laser.

ruby laser : ruby laser first man-made optical frequency laser.

RUH: Same as RU, but heat-resistant. 75°C

Rulemaking (regulations): The authority delegated to administrative agencies by Congress or State legislative bodies to make rules that have the force of law. Frequently, statutory laws that express broad terms of a policy are implemented more specifically by administrative rules, regulations, and practices.

Ruling Section: More accurately termed limiting ruling section. One of the most important factors associated with the choice of steel for a given purpose is to ensure that the desired mechanical properties are obtained throughout the section when the material has been heat treated. The limiting ruling section determines the maximum diameter or cross section of a bar or component in which the specified properties can be achieved by a given heat treatment. The analysis of the steel also has an important bearing on this.

Run off: That portion of the precipitation that flows over the land surface and ultimately reaches streams to complete the water cycle. Melting snow is an important source of this water as well as all amounts of surface water that move to streams or rivers through any given area of a drainage basin.

run winding : run winding the main winding of a single-phase induction motor.

run-length coding : run-length coding the assignment of a codeword to each possible run of 0s (white pel sequence) or run of 1s (black pel sequence) in a scan of the subject copy.

Runner Riser: A conventional runner, usually in the horizontal plane, which permits flow of molten metal to the ingate and is large enough to act as a reservoir to feed the casting.

Running and quick-start capability: The net capability of generating units that carry load or have quick-start capability. In general, quick-start capability refers to generating units that can be available for load within a 30-minute period.

running and quick-start capability : Generating units that can be made available to carry load within a 30-minute period.

running digital sum : running digital sum the difference between cumulative totals of the number of logic 1s and number of logic 0s in a binary sequence. It is a common measure in the performance of a line code.

Running Pump: A pump in a hydraulic system that is being used to create pressure.

Run-of-mine coal: Coal as it comes from the mine prior to screening or any other treatment.

Run-of-river hydroelectric plant: A low-head plant using the flow of a stream as it occurs and having little or no reservoir capacity for storage.

Runout: A casting defect caused by incomplete filling of the mold due to molten metal draining or leaking out of some part of the mold cavity during pouring; escape of molten metal from a furnace, mold or melting crucible.

Runway approach aids. : System or markings, which assist pilots to land their aircraft.

Rupture: In the breaking strength or tensile strength tests the point at which a material physically comes apart as opposed to yield strength, elongation, etc.

Rural Electrification Administration (REA): A lending agency of the U. S. Department of Agriculture, the REA makes self-liquidating loans to qualified borrowers to finance electric and telephone service to rural areas. The REA finances the construction and operation of generating plants, electric transmission and distribution lines, or systems for the furnishing of initial and continued adequate electric services to persons in rural areas not receiving central station service.

Ruthenium: Chemical symbol Ru. A white metal noted for its harness; the most expensive of the platinum group

RUW: Same as RU, but moisture-resistant. 60°C

R-value: A measure of a material's resistance to heat flow in units of Fahrenheit degrees x hours x square feet per Btu. The higher the R-value of a material, the greater its insulating capability. The R-value of some insulating materials is 3.7 per inch for fiber glass and cellulose, 2.5 per inch for vermiculite, and more than 4 per inch for foam. All building materials have some R-value. For example, a 4-inch brick has an R-value of 0.8, and half-inch plywood has an R-value of 0.6. The table below converts the most common "R" values to inches. For other "R" values, divide the "R" value by 3 to get the number of inches.

RVP: See Reid Vapor Pressure.

RW: Rubber-insulated building wire. Moisture-resistant. 60°C

RW (Lighting): Roadway Width

Rw. : Telegraphic code signal implying request for a repeat of signal just received.

RWS: Same as RW, but synthetic rubber.

S: Heavy duty, rubber-insulated, portable cord. Stranded copper conductors with separator and individual rubber insulation. Two or more color coded conductors cabled with filler, wrapped with separator and rubber jacketed overall. 600V

S Relay: A device used to direct the oil flow to the main piston which in turn causes it to move allowing the opening and closing of the steam controlling valves on a low pressure generator.

S.I. Engine: Distance travelled by piston per unit volume is called piston speed . If L is piston stroke and speed of engine is

shaft is N revolution per minute. So piston speed will be $2LN$ m/min

S.I.R.: System Impedance Ratio

S-100 : S-100 a 100-pin bus formerly used by computer hobbyists and experimenters.

SA: Silicone rubber insulation, asbestos or glass braid, for use in dry locations. Maximum operating temperature for special applications, 125°C.

Sacrificial Barrier: A coating, such as zinc, which sacrifices itself to the corrosive elements of the atmosphere to protect the steel from corrosion.

Saddle : Line equipment used to transfer coils up, down, on, or off the reels. The saddle is sometimes referred to as a traverse car.

saddle : saddle a U-shaped piece of wire which is crimped to a main conductor so that a hot tap cf. can be readily attached at a later time.

Sae Specifications: A set of materials specification issued by the Society of Automotive Engineers, Inc.

Safe Medical Devices Act (SMDA) : Safe Medical Devices Act (SMDA) a public law that imposes reporting requirements on "device-user facilities" including hospitals, ambulatory surgical facilities, nursing homes, and outpatient clinics. They are required to report information that "reasonably suggests" the probability that a medical device has caused or contributed to the death, serious injury, or serious illness of a patient at that facility.

Safeguard : Safeguard a program administered by the International Atomic Energy Agency comprising procedures and inspections which assure that fissile materials from power reactors are not diverted to nuclear weapons use.

Safeguard, to : the term "to secure" a radio transmission is used to indicate that action is taken to ensure that it cannot be used by an enemy as a navigational aid. Safeguarding action may take the form of navigational intelligence given by a system.

Safeties: Valves that open to relieve excessive pressure.

safety : safety the probability that a system will either perform its functions correctly or will discontinue its functions in a well-defined, safe manner.

Safety circuit. : See circuit, safety.

Safety Closure System: A safety closure system is any system that helps to prevent accidental access to an area. An example of a safety closure system would be an automatic gate mechanism designed to prevent unintended access to the edge of a dock, a stairway, or an elevator shaft.

Safety Factor: The ratio of burst pressure to rated pressure under specific static pressure and temperature conditions.

Safety Horn: A horn used to alert the crew that the line or parts of the line is about to be jogged.

safety-critical system : safety-critical system a system that is intended to handle rare unexpected, dangerous events.

Sag: A decrease in metal section in casting due to sagging of the cope or core.

Sag: The amount of vertical displacement of an overhead conductor between support points. Sag is a consideration when designing a pole or tower line and will be a determining consideration in the overall height of the structure. Sag varies with the temperature.

sag: A voltage sag is a momentary (less than 2 seconds and more than 1 cycle) decrease in voltage outside the normal tolerance. Voltage sags are often caused by starting heavy loads, such as motors or welding equipment, and by power system faults.

sag : sag a decline ranging from 0.1 to 0.9 pu in RMS voltage or current at the supply frequency for a time period of 0.5 cycles to 1 minute.

Sag (conductor): The vertical distance between a suspended conductor and an imaginary straight-line connecting the points of suspension. Sag may be measured at the mid point between the suspensions, the lowest point of the conductor or at any specified point.

Sagittal projection : Sagittal projection a projection of a 3-dimensional object onto a 2-dimensional plane which intersects the object in a front to back direction dividing the objects into right and left halves. Typically with reference to an animal or human body.

Sagnac interferometer : Sagnac interferometer a common path interferometer devised by Georges Sagnac to measure the ether wind, then adapted as an optical gyroscope, and most recently utilized for hyperspectral imaging. A Sagnac interferometer is composed of two coils of optical fiber arranged so that light from a single source travels clockwise in one and counter-clockwise in the other.

Sagop. : Electronic equivalent of a general operations plot.

SAIDA: A distribution system reliability measure of the system average interruption duration index. It is commonly measured in customer minutes of interruption and is commonly used as an electric service performance metric.

SAIFI: A distribution system reliability measure of the system average interruption frequency index. It measures sustained outages and interruptions and is a metric for the entire power system.

sail switch : sail switch a device used in control systems that detects the flow of air, or other gas, and causes a relay to open or close as a result of the motion of the sail.

Salable coal: The shippable product of a coal mine or preparation plant. Depending on customer specifications, salable coal may be run-of-mine, crushed-and-screened (sized) coal, or the clean coal yield from a preparation plant.

Salable natural gas: Natural gas marketed under controlled quality conditions.

Salamander: 1) A heating device, usually of drum shape, in which fuel is burned in the open air by natural draft, 2) iron which

has collected in the bottom of a blast furnace during a blow.

Sales: See Energy sales.

Sales for resale: A type of wholesale sales covering energy supplied to other electric utilities, cooperatives, municipalities, and Federal and state electric agencies for resale to ultimate consumers.

Sales for resale (electric): A type of wholesale sales covering energy supplied to other electric utilities, cooperatives, municipalities, and Federal and state electric agencies for resale to ultimate consumers. FERC definition

Sales to end users: Sales made directly to the consumer of the product. Includes bulk consumers, such as agriculture, industry, and utilities, as well as residential and commercial consumers.

Sales type: Sales categories of sales to end-users and sales for resale.

Sales volume (coal): The reported output from Federal and/or Indian lands, the basis of royalties. It is approximately equivalent to production, which includes coal sold, and coal added to stockpiles.

salient feature : salient feature a characteristic often local feature on an object which can be detected and used as part of the process of inferring the presence of an object from its features. Typical salient features include point features such as corners and small holes, or fiducial marks (e.g., on printed circuit boards), but may in addition include large-scale straight-forwardly detected features such as large circular holes which can also aid the inference process.

Salt gradient solar ponds: These consist of three main layers. The top layer is near ambient and has low salt content. The bottom layer is hot, typically 160° F to 212° F (71° C to 100° C), and is very salty. The important gradient zone separates these zones. The gradient zone acts as a transparent insulator, permitting the sunlight to be trapped in the hot bottom layer (from which useful heat is withdrawn). This is because the salt gradient, which increases the brine density with depth, counteracts the buoyancy effect of the warmer water below (which would otherwise rise to the surface and lose its heat to the air). An organic Rankine cycle engine is used to convert the thermal energy to electricity.

Salt Spray Test: A test to determine the life of coated steel when exposed to corrosive saltwater solution (generally 5% NaCl).

Salvage: Smaller coils sold at above the scrap price.

Sample: A part, portion or piece taken for purposes of inspection or test as representative of the whole

sample : sample a single measurement that is taken to be representative of the measured property over a wider area, frequency range, or time period. When recording digital sound, a sample is a voltage measurement that reflects the intensity of the acoustic signal at a particular moment, and has a time period associated with it, that is, the sample represents the signal until the next measurement is made. In a digital image, a sample is a single measurement of light intensity at a particular point in the scene, and that measurement is used to represent the actual but unmeasured intensity at nearby points.

Sample (coal): A representative fraction of a coalbed collected by approved methods, guarded against contamination or adulteration, and analyzed to determine the nature; chemical, mineralogic, and (or) petrographic composition; percentage or parts-per-million content of specified constituents; heat value; and possibly the reactivity of the coal or its constituents.

sample complexity : sample complexity the number of training examples required for a learning system to attain a specified learning goal.

sample space : sample space the set of all possible samples of a signal, given the particular parameters of the sampling scheme.

sample tests: This is done only on a few samples of the equipment. In these the sample is tested fully, up to and including the point of breakdown.

Sample-And-Hold (S/H): Circuit that acquires and stores an analog voltage on a capacitor for subsequent conversion.

sample-and-hold circuit : sample-and-hold circuit a device with a mode control switch that causes reading the input at the instance of the trigger and maintaining that value until the next trigger pulse.

sampling: sampling function a mathematical function used when sampling a signal. In particular, a sampling function $S_t/$ can be multiplied by the continuous function to be sampled, $F ./$, to obtain the sampled version of F . S is most often a collection of equally spaced impulses.

sampling frequency : sampling the act of turning a time-continuous signal into a signal that is time-discrete or time-discontinuous. See the following diagrams, where TS is the sampling period.

sampling function : sampling frequency in analog-to-digital conversion, the rate or frequency at which an analog signal is sampled and converted into a digital signal.

Sand: In metalcasting, a loose, granular material high in SiO_2 , resulting from the disintegration of rock. The name sand refers to the size of grain and not to mineral composition. Diameter of the individual grains can vary from approximately 6 to 270 mesh. Most foundry sands are made up principally of the mineral quartz (silica). Reason for this is that sand is plentiful, refractory, and cheap; miscellaneous sands include zircon, olivine, chromite, $CaCO_3$, black sand (lava grains), titanium minerals and others.

Sand Blasting: The process of cleaning forgings by propelling sand against them at high velocity. See also Blast Cleaning.

Sand Control: Procedure whereby various properties of foundry sand, such as fineness, permeability, green strength, moisture content, etc., are adjusted to obtain castings free from blows, scabs, veins, and similar defects.

Sand Mulling: A method of evenly distributing the bond around the sand grain by a rubbing action.

Sand Plow: A bladed device used to divert sand from a belt conveyor into a sand hopper.

Sand Porosity: Volume of the pore spaces or folds in a sand. (Not synonymous with permeability).

Sand Reclamation: Processing of used foundry sand grains by thermal, attraction or hydraulic methods so that it may be used in place of new sand without substantially changing current foundry sand practice.

Sand Tempering: Dampening and cutting over or otherwise mixing sand to produce uniform distribution of moisture, and allowing time for migration of water molecules.

Sand Wall: Temporary independent wall separated from a slag pocket wall; facilitates slag removal and protects permanent wall.

Sanding Stick: A wooden stick that has sandpaper on one end that is used to prevent defects on the rolls from being transferred onto the strip.

Sanding Stone: Equipment used to remove grit from rolls, tin or zinc build up from knives, and to clean the burr mashers.

saponification: The chemical process of forming a soap. More particularly a deterioration by softening of caused by the action of aqueous alkali on fatty-acid constituents.

SAT: Site Acceptance Test. Validation procedures for equipment executed with the customer on site.

satellite cell : satellite cell cell with the radius larger than 500 km where the cell is controlled by a satellite. See also cell.

satellite imagery : satellite imagery the acquisition of pictures of the earth from space. Satellite imagery can be used to enhance maps, collect resource inventories (e.g., forestry, water, land use), assess environmental impact, appraise damage following a disaster, and collect information on the activities of humans. Satellite imagery tends to be multi-spectral, including a wide range of optical frequencies and, more recently, infrared and radar. See also remote sensing.

Satellite power system (SPS): Concept for providing large amounts of electricity for use on the Earth from one or more satellites in geosynchronous Earth orbit. A very large array of solar cells on each satellite would provide electricity, which would be converted to microwave energy and beamed to a receiving antenna on the ground. There, it would be reconverted into electricity and distributed the same as any other centrally generated power, through a grid.

Satellite, geostationary. : A geosynchronous satellite whose circular and direct orbit lies in the plane of the earth's equator and which thus remains fixed relative to the earth; by extension, a satellite that remains approximately fixed relative to the earth.

Satellite, geosynchronous. : An earth satellite whose period of revolution is equal to the period of rotation of the earth about its axis.

saturable absorber : saturable absorber the nonlinear optical phenomenon in which the absorption coefficient of a material decreases as the intensity of the light used to measure the absorption increases.

saturable absorption : saturable absorption the effect of there being less absorption in a material for larger values of the incident illumination.

saturated gain : saturated gain value of the gain in a saturable amplifier for a particular value of intensity.

saturated logic : saturated logic logic gates whose output is fully on or fully off, determined principally by the external circuit.

saturating control : saturating control a controller producing a bounded control signal. Finite limits on the magnitude of the control signals that are provided by the actuators are due to the fact that the actuators are physical devices and as such are subject to physical constraints. Thus, the actuator saturates, that is, it has "limited authority."

saturation : saturation (1) the failure of the output to increase as fast as the input. For example, often the current regulator used in variable-speed drives is unable to track the commanded current because of insufficient voltage difference between the motor back EMF and the supply. In an amplifier, saturation results in a reduction of gain in an amplifier or loss in an absorber due to the intensity of the signal being amplified or absorbed. In ferromagnetic circuits, the magnetic flux initially increases linearly with the applied magnetomotive force (MMF), but eventually most of the domains in the ferromagnetic material become aligned, and the rate of increase in flux decreases as the MMF continues to increase. See figure below. See also saturation flux density .

saturation angle : saturation angle the angular portion of the time-based output signal (in degrees) over which the device is saturated. It is always less than or equal to the conduction angle, since the device must conduct before it can saturate.

saturation flux density i: saturation flux density the maximum value of intrinsic induction (B_i) beyond which an increase in magnetizing field yields no further improvement, indicating that all magnetic moments in the material have been aligned.

saturation intensity : saturation intensity the intensity of a beam of light above which saturation effects become appreciable. See also saturable absorption.

saturation magnetization : saturation magnetization the magnetic moment per unit volume of a material when the magnetization in the sample is aligned (saturated) by a large magnetic field.

saturation parameter : saturation parameter reciprocal of the value of intensity for which the gain of an amplifying medium or the loss of an absorbing medium is reduced to one half of its un-saturated value.

saturation polarization : saturation polarization the value to which the externally measured electrical dipole moment of a ferroelectric body tends when subjected to an external electrical field greater than the coercive field.

Saturation Temperature: The boiling point of a liquid, or the temperature at which the liquid vapor pressure is equal to the total local pressure. The saturation temperature for water at atmospheric pressure is 212°F (100°C).

saturation. : The overwhelming of a receiver by an excessively high input signal such as jamming. See recovery time.

save instruction : save instruction an assembly language instruction that saves information about the currently executing process.

saw-tooth coupler : saw-tooth coupler transmission line coupler consisting of two parallel transmission lines placed in close proximity to one another. The adjacent edges of the two transmission lines are shaped in a notch or saw-tooth pattern to equalize the phase velocity of the even and odd mode voltage components.

SB: Slow burning wire. Three cotton braids, impregnated. 90°C

S-band. : The range of frequencies extending from 1.55ghz to 5.20ghz.

SBR: Rubber co-polymer of styrene and butadiene.

SCA : SCA See subsidiary communication authorization and station control error.

Scab: An imperfection consisting of a thin, flat piece of metal attached to the surface of a sand casting or ingot. A scab usually is separated from the casting proper by a thin layer of sand or refractory and is attached to the casting along one edge. An erosion scab is similar in appearance to a cut or wash.

Scab (Scabby): A blemish caused on a casting by eruption of gas from the mold face, or by uneven mold surfaces; or occurring where the skin from a blowhole has partly burned away and is not welded.

SCADA: Supervisory Control and Data Acquisition.

SCADA : SCADA acronym for supervisory control and data acquisition. A system which measures critical power system parameters (e.g., voltage, power flow, circuit breaker status, and generator outputs) at remote points in an electric power system and transmits the data to a central control site where these conditions may be monitored.

scalable video coding : scalable video coding compression of video such that transmission at different data rates, or reception by decoders with differing performance, is possible merely by discarding or ignoring some of the compressed bitstream, i.e., without recoding the data. The compressed data are prioritized such that low-fidelity reconstruction is possible from the high-priority data alone; addition of lower-priority data improves the fidelity.

scalar network analyzer : scalar network analyzer a test instrument designed to measure and process only the magnitude of transmitted and reflected waves. Used to measure such microwave characteristics as insertion loss, gain, return loss, SWR, and power.

scalar processor : scalar processor a CPU that dispatches at most one instruction at a time.

scalar quantization (SQ) : scalar quantization (SQ) (1) quantization of a scalar entity (a number; as opposed to vector quantization), obtained, e.g., from sampling a speech signal at a particular time-instant. Each input value to the quantizer is assigned a reproduction value, chosen from a finite set of possible reproductions. A device performing scalar quantization is called a (scalar) quantizer.(2) a type of quantization in which a scalar quantity is quantized into another scalar quantity.

scalar wave : scalar wave equation in optics, a simplification of the Maxwell–Heaviside equations that governs a single scalar function representing an electromagnetic wave; sometimes a complex equation if the waves are harmonic in time.

scalar wave equation : scalar wave wave that can be described by a single scalar function of space and time.

scale : scale (1) a property of an image relating the size of a pixel in the image to the size of the corresponding sampled area in the scene. A large scale image shows object features in more detail than a small scale image. (See also resolution.)(2) to change the size (i.e., enlarge or shrink) of an image or object while maintaining the overall proportions. (3) one of two parameters of a wavelet, the other being translation. The scale specifies the duration of the wavelet.

scaled processor architecture (SPARC) : scaled processor architecture (SPARC) name for a proprietary class of CPUs.

Scales: The oxidised surface of steel produced during hot working, as in rolling, and exposure to air or steam at elevated temperature.

scaling function : scaling function the solution to the multi-scale equation; it can be obtained by iterating a low pass filter in the two-channel filter bank an infinite number of times.

Scaling Resistor: A resistor added to an output circuit of measurement equipment to provide a scaled voltage output. The output is not a "true" voltage output and may be susceptible to loading errors.

Scalping: Machining the surface layers from ingots, billets and slabs before fabrication.

scan design : scan design a technique whereby storage elements (i.e., flip-flops) in an IC are connected in series to form a shift-register structure that can be entered into a test mode to load/unload data values to/from the individual flip-flops.

scan line : scan line in a digital image, a contiguous set of intensity samples reflecting one row or column of the image. A class of image processing algorithms, called scan line or scan conversion methods, looks at the image one or two scan lines at a time in order to achieve the goal.

Scan period. : The period taken by a radar to complete its scan pattern and return to its starting point.

Scan. : In electromagnetic or acoustic search, one complete rotation of the antenna. It may determine a time basis.

scan-based testing : scan-based testing a mechanism for accessing all the data in a hardware module by treating it as one long shift register and then shifting the data out of the module one bit at a time. A device with this capability can also be set to any desired state by shifting in the desired state. The method can also be applied to software objects.

Scanner: 1) An electronic eye that is sensitive to certain areas of the light spectrum used to detect flame in the boiler. 2) Refers to hardware used to scan the bar coded labels containing the IPM no. of the coil and the location for inventory identification. Interfaces directly to the DEC computer through the Radiofrequency (RF) Backbone.

scanner : scanner (1) a device used for scanning written documents or printed pictures by tracing light along a series of many closely spaced parallel lines.(2) any device that deflects a light beam through a range of angles, using mechanisms such as diffraction from electro-optic or acousto-optic gratings or mechanical deflectors. (3) a type of projection printing tool whereby the mask and the wafer are scanned past the small field of the optical system that is projecting the image of the mask

onto the wafer.

Scanner Fan: Fan which provides ambient air for the purpose of keeping the flame scanners cool.

scanning : scanning process for converting attributes of a display at raster coordinate locations, such as color and intensity, into a fixed set of numerical attributes for manipulation, transmission, or storage of the display.

scanning tunneling microscope : scanning tunneling microscope extremely sensitive method for measuring atomic position at a surface by monitoring the electron current due to tunneling between a moveable metal tip and the surface semiconductor.

scan-test path : scan-test path a technique that enhances circuit observability and controllability by using a register with shift (in test mode) and parallel load (during normal operation) capabilities.

scara manipulator: scara manipulator a robot with three parallel revolute joints allowing it to move and orient in a plane .q1; q2; q3/ with a fourth prismatic joint .q4/ for moving the end-effector normal to the plane. Usually scara manipulators can move very fast and they are used to assemble the parts.

Scarf Joint: A butt joint in which the plane of the joint is inclined with respect to the main axes of the members.

Scatter, ionospheric (fpis; ifs) . : The propagation of radio waves scattering as a result of irregularities or discontinuities in the ionization of the ionosphere. See scattering, back and scattering forward (fpis; fpts; ifs; tfs).

Scatter, tropospheric (fpts; tfs) . : The propagation of radio waves over the earth by scattering from irregularities or discontinuities in the atmospheric properties within the troposphere.

scattering cross section : scattering cross section total energy scattered in all directions, normalized to the wavenumber squared. It has dimensions of area.

scattering function : scattering function the scattering function is a function of two variables, delay and Doppler shift, characterizing the spread of average received signal energy over time and frequency. In a nondispersive channel (no multipath and no Doppler shift), the scattering function is simply an impulse at zero delay and zero Doppler shift.

scattering holography : scattering holography recovery of the phase of the scattered light by means of its interference with a reference beam, both emanating from the same coherent source, such as the same laser beam.

scattering parameters : scattering parameters parameters that characterize a microwave network with an arbitrary number of ports by relating the voltage waves incident on the ports to those reflected from the ports. Also known as S-parameters. The scattering parameters are often represented in terms of a scattering matrix. See also scattering matrix.

scattering resonance : scattering resonance sharp increase (or decay) of the scattered energy as a function of either frequency or observation direction, as for the glory or the rainbow.

Scattering, back. : In radio wave propagation, scattering in which the propagation directions of the incident and scattered waves under consideration, resolved along a reference direction (usually horizontal) are oppositely directed. Note. A signal received by back scattering is often referred to as backscatter.

Scattering, forward (fpis; fpts; ifs; tfs) . : In radio wave propagation, scattering in which the propagation directions of the incident and scattered waves under consideration, resolved along a reference direction (usually horizontal), are directed in the same sense. Note. A signal received by forward scatter, for example, ionospheric forward scatter, tropospheric forward scatter.

Scattering. : See scatter, ionospheric and scatter tropospheric.

scatterometer : scatterometer a device to measure the angular distribution of scattered intensity. Its main component contains a photodetector mounted over a goniometer.

Scavenging Rate: Establishes the purity of the hydrogen gas in the generator.

Scba: Self Contained Breathing Apparatus

scene analysis : scene analysis the process of analyzing a 3-D scene from 2-D images. Typically, this process will involve object and feature detection, inference of the presence of objects from

Schedule: A list of product to be processed on a unit.

Schedule: A statement of the pricing format of electricity and the terms and conditions governing its applications.

Schedule Book: A group of schedules or order matters that contain customer specifications for processing.

Scheduled outage: The shutdown of a generating unit, transmission line, or other facility for inspection or maintenance, in accordance with an advance schedule.

scheduled outage: The shutdown of a generating unit, transmission line, or other facility, for inspection or maintenance, in accordance with an advance schedule.

scheduler : scheduler a part of the operating system for a computer that decides the order in which programs will run.

scheduling : scheduling in an operating system, scheduling of CPU time among competing processes.

Scheduling coordinators: Entities certified by the Federal Energy Regulatory Commission (FERC) that act on behalf of generators, supply aggregators (wholesale marketers), retailers, and customers to schedule the distribution of electricity.

schematic : schematic a diagram that shows how an electronic device is constructed.

schematic capture : schematic capture a design entry method wherein the designer draws the schematic of the desired circuit using a library of standard cells. The program outputs a netlist of the schematic.

Schematic Diagram: A diagram which shows, by means of graphic symbols, the electrical connections and functions of a circuit.

schematic diagram : schematic diagram a circuit diagram, divorced of biasing subcircuits, that depicts only the dynamic signal flow paths of an electronic circuit.

Schematic or schematic diagram: A drawing depicting how the components are connected using standardized symbols.

Schmoo plot : Schmoo plot an X-Y plot giving the pass/fail region for a specific test while vary-ing the parameters in the X and Y coordi-nates.

Schottky barrier : A cell barrier established as the interface between a semiconductor, such as silicon, and a sheet of metal.

Schottky barrier diode : Schottky barrier diode a two-terminal junction barrier device formed by a junction of a semiconductor and a metal. These diodes are widely used in integrated circuit applica-tions and in very high frequency mixer and multipliers. Also called hot-carrier diode.

Schottky contact : Schottky contact a metal-to-semiconductor contact where, in order to align the Fermi lev-els on both sides of the junction, the energy band forms a barrier in the majority carrier path.

Schur matrix : Schur matrix a square matrix with real elements and whose all eigenvalues have ab-solute values less than one.

scientific visualization : scientific visualization the use of com-puter graphics techniques to represent com-plex physical phenomena and multidimen-sional data in order to aid in its understanding and interpretation.

scintillation : scintillation the variation of electromag-netic signal strength with time due to random changes in time of refractive index of the at-mosphere. Apparent at optical frequencies as the twinkling of stars.

Scintillation.: In a radio transmitter, unwanted momentary rapid fluctuation of the operating frequency.

Scleroscope Hardness (Test): A hardness test where the loss in kinetic energy of a falling metal tup, absorbed by indentation upon impact of the tup on the metal being tested, is indicated by the height of rebound.

Scoop: is a rubber-tired haulage vehicle used in thin coalbeds.

Scoop loading: An underground loading method by which coal is removed from the working face by a tractor unit equipped with a hydraulically operated bucket attached to the front; also called a front-end loader.

scoreboard : scoreboard term originally used for a cen-tralized control unit in the CDC 6600 proces-sor which enabled out-of-order issue of in-structions. The scoreboard unit held various information to detect dependencies. Now sometimes used for the simpler mechanism of having a single valid bit associated with each operand register.

Scotch Brite: Mechanical finish produced by applying scotch brite (registered trademark of 3M co.) to the surface of the metal to give a fine scratch pattern appearance. It is also useful I reducing tool wear (i.e. removal of abrasive surface osides

scotopic : scotopic formally, a description of lumi-nances under which human rod cells are ac-tive. Informally, describing dim or night-time luminances.

scotopic vision : scotopic vision vision in the eye deter-mined by the number of and condition of the rods in the eye. Also called night vision.

SCP: Substation Control Point. HMI computers at substation level allowing the operators to control the substation.

SCR: Silicon Controlled Rectifier. Semiconductor used in AC two-wire devices to provide voltage to the device and to switch in-line loads.

SCR : Silicone Controlled Rectifier.

scram : scram the emergency shutdown of a nu-clear reactor by the rapid insertion of all con-trol rods. The term is attributed to Enrico Fermi.

Scramble (1).: In telephony. To make telephony unintelligible to casual interception.

Scramble (2).: In cryptography. To mix in a random or quasi-random fashion.

scrambling : scrambling randomization of a symbol sequence using reversible processes that do not introduce redundancy into the bit stream. See also reset scrambling, self-synchronizing scrambling.

Scrap: Material unsuitable for direct use but usable for reprocessing by re melting.

Scrap Baller: Device on the Delivery End of a slitter which collects the sidetrimmed edges of the coils and winds them into a ball.

Scrap Deflector: A device used to direct the edge of the strip that was cut away by the slitter knives. This waste is now considered to be scrap and is directed to the scrap baller by the deflector.

Scrap Sheet: The portions of the coil that are discarded because they are out of spec.

Scrap Substitute: Raw material that can be charged in place of scrap in electric arc furnaces and basic oxygen furnaces.

Scrap substitutes include, among others, DRI, HBI, iron carbide, and pig iron.

Scrapper Ring: A metal or synthetic ring that is fitted to the shaft of a cylinder to remove particles from the shaft so to prevent them from entering the cylinder seal chamber.

Scratch: (1) For rolled products, a sharp indentation in the surface usually caused by a machine or during handling. (2) For extrusions, a synonym for handling mark. See ?Mark, Handling?.

Scratch Brushed Finish: Finish obtained by mechanically brushing the surface with wire bristle brushes, by buffing with greaseless compound or by cold rolling with wire bristled rolls on scratch etched finish.

Scratches: 1) A defect on a strip where small portions of tin coating have been removed. 2) Defect that manifests itself in many forms generally due to scoring of the strip surface by an outside source.

Screen (Sand): A sieve or riddle with openings of definite size used to separate one gain size from another or to remove lumps from sand.

Screen Analysis (Sieve Analysis): Distribution of particle size sand expressed in terms of the percentage of weight retained on each of a series of standard screens decreasing in mesh size and the percentage passed by the screen of finest mesh.

Screen Box: An in line water filter for water delivered from the river to the powerhouse. The screen box contains a screen

filter that catches particulates and prevents them from entering the water system.

Screen Box Chart: A chart in the old pump room that gives the Pump Tender the pressure on the screen box and whether it is dirty or not.

Screen Decks: A system that provides a method to screen the fines from the sinter product. The screen decks are slotted or blanked.

Screen Tubes: Tubes that run from the front drum to a header on the east wall at the third floor level. While no steam is generated, water circulates rapidly through these tubes and their purpose is to block or screen the boiler fly ash and prevent its carryover into the superheater elements and generators. This area receives heavy slagging during boiler operation and must be washed daily.

Screenings: The undersized coal from a screening process, usually one-half inch or smaller.

Screw Extruder: A machine which accepts solid particles (pellet or powder) or liquid (molten) feed; melts and conveys it through a surrounding barrel by means of a rotating screw and pumps it, under pressure, through a die.

Scribe Marking: Scribe marking is a surface marking process that etches straight line segments into a surface. The line segments can be used to represent a graphic image or a series of alphanumeric characters. Scribe marking heads are mounted onto articulating or robotic arms and linked to a controller that guides the marking process.

Scribing: The cutting of a grid pattern of grooves in a semiconductor material, generally for the purpose of making interconnections.

scrubber : scrubber a means of removing sulfur dioxide from coal-burning power plant ex-haust gas by forcing it through a chemical solution.

SCS: Substation Control System.

SD: Service drop cable. Two code-rubber-insulated conductors, tape, laid parallel with neutral conductor concentric turnover. Tape and braid overall. Also round construction.

SDC: Self Damping Conductors

Sdlc, synchronous data link control. : An IBM communications protocol, commonly used in an SNA environment.

SDN: Small diameter multi-conductor control cable with neoprene jacket and nylon sheath over polyethylene insulation.

SDT/TC: Thermo plastic 90°C tray cable.

Se: Chemical symbol for Selenium.

SE: Above ground service entrance cable, not protected against mechanical abuse. Flame-retardant, moisture-resistant covering. Over neoprene sheath. 60°C-75°C

Sea: Special end area ? inspection to check for defects at either of a steel tube which is also being inspected electronic (EMI misses the ends.)

SEA: Service entrance cable, steel-armored under outer braid, one or two rubber-insulated conductors with neutral conductor served concentrically, moisture-resistant tape, weatherproof-braid finish. 300V, 75°C

Sea return. : Wanted echoes received from the surface of the sea by a radar set.

Seal: See O RING and GASKET.

Seal Oil: Pressurized oil that flows along the shaft through the clearance space between the gland rings and the shaft. As long as the oil pressure exceeds the gas pressure in the machine, the oil flow will prevent hydrogen gas from escaping. Seal oil systems are on #8 and #9 Generators.

Seal Tank: A tank that allows a free flow of effluent water the scrubber to the recycle/effluent tank and maintains a water seal on the scrubber to prevent the sulfur gases from escaping into the surrounding atmosphere.

Seal Water: Water that is used to quench excess steam that escapes from the seal areas.

Sealed Cell (Battery): Cells that are free from routine maintenance and can be operated without regard to position.

Sealed Gauge Pressure (PSIS): A measure of pressure reference to atmospheric pressure.

Sealed Source: Any radioactive material that is encased in and is to be used in a container in a manner intended to prevent leakage of the radioactive material.

seal-in relay : seal-in relay an auxiliary relay that re-mains energized through one of its own contacts, which bypasses the initiating circuit until deenergized by some other device.

sealing current : sealing current the current necessary to complete the movement of the armature of a magnetic circuit closing device from the position at which the contacts first touch each other.

sealing voltage : sealing voltage the voltage necessary to complete the movement of the armature of a magnetic circuit closing device from the position at which the contacts first touch each other.

Seam: On the surface of metal, an unwelded joint or lap which appears as a crack, usually resulting from a defect obtained in casting or in working.

Seam: A bed of coal lying between a roof and floor. Equivalent term to bed, commonly used by industry.

Seam Welding: An electric resistance type of welding process, in which the lapped sheet is passed between electrodes of the roller type while a series of overlapping spot welds is made by the intermittent application of electric current.

Seamless: A hollow product which does not contain any line junctures resulting from method of manufacture.

Seamless Pipe: Pipe made from a solid billet, which is heated, then rotated under extreme pressure. This rotational pressure creates an opening in the center of the billet, which is then shaped by a mandrel to form pipe.

Seamless Steel Tube: Tubing refers to sections of long, hollow, flexible cylinders typically used to move substances,

usually fluids or gases. Seamless steel tube is a high strength tubing used in applications where the tubing is subjected to high stresses or loads. The tube is seamless as a result of the production process, either extrusion through a die or in a forging application called piercing.

search coil : search coil a solenoid that is wound with an air core or around a magnet or permeable component of a magnetic circuit to measure the change of flux within the coil; used with a fluxmeter.

Search receiver. : A receiver that can be tuned over a relatively wide frequency range in order to detect and measure electromagnetic signals.

Seasonal energy efficiency ratio (SEER): Ratio of the cooling output divided by the power consumption. It is the Btu of cooling output during its normal annual usage divided by the total electric energy input in watt hours during the same period. This is a measure of the cooling performance for rating central air conditioners and central heat pumps. The appliance standards required a minimum SEER of 10 for split-system central air conditioners and for split-system central heat pumps in 1992. (The average heat pump or central air conditioner sold in 1986 had an SEER of about 9.)

Seasonal energy-efficiency ratio (SEER): The ratio of the total seasonal cooling requirement (measured in Btu) to the total seasonal watt-hours (Wh) of energy used, expressed in terms of Btu/Wh. (The SEER rating equals 3.413 times the seasonal COP.)

Seasonal pricing: A special electric rate feature under which the price per unit of energy depends on the season of the year.

Seasonal rates: Different seasons of the year are structured into an electric rate schedule whereby an electric utility provides service to consumers at different rates. The electric rate schedule usually takes into account demand based on weather and other factors.

Seasonal units: Housing units intended for occupancy at only certain seasons of the year. Seasonal units include units intended only for recreational use, such as beach cottages and hunting cabins. It is not likely that this type of unit will be the usual residence for a household, because it may not be fit for living quarters for more than half of the year.

Seasoned wood: Wood, used for fuel, that has been air dried so that it contains 15 to 20 percent moisture content (wet basis).

Seawater Desalination System: A seawater desalination system is used to turn saltwater into potable drinking water in areas of the world where drinking water is in limited supply. Most seawater desalination systems make use of a reverse osmosis system to help separate the salt and other particles from the water. Seawater desalination systems also include other components to pretreat, test and remineralize the water to safe levels.

second harmonic component : second harmonic component the signal component of a periodic signal whose frequency is twice the fundamental frequency.

second order discrete time system : second order discrete time system a discrete system for which the difference between the input and output signals is of second order.

second order system : second order system a continuous time system described by a second order differential equation.

second(s): The second is the SI unit of time. It is a fundamental unit. It is defined as the duration of 9 192 631 770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium 133 atom [1967]

Secondaries: These are the conductors originating at the low-voltage secondary winding of a distribution transformer.

secondary: That winding of a transformer which receives its energy by electromagnetic induction from the primary. A transformer may have one or more secondaries. Security is the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system facilities.

Secondary: The windings which receive the energy by induction from the primary.

secondary cache : secondary cache a buffer element between slow-speed peripheral devices, such as disks, and a high-speed computer.

Secondary cell: A device whose ingredients convert chemical energy to electrical energy but can be recharged.

Secondary cell : A secondary cell can be electrically recharged after use. The cell converts chemical energy into electrical energy

Secondary Coils: Coils not sold as prime.

secondary distribution system : secondary distribution system a distribution system in which a significant the sub-division of power to customers is done on the secondary, or low-voltage side of the distribution transformer, as opposed to the practice of assigning a small distribution transformer to each customer or small group of customers.

Secondary Hardening: Tempering certain alloy steels at certain temperatures so that the resulting hardness is greater than that obtained by tempering the same steel at some lower temperature for the same time.

Secondary heating equipment: Space-heating equipment used less often than the main space-heating equipment.

Secondary heating fuel: Fuels used in secondary space-heating equipment.

secondary memory : secondary memory generic term used to refer to any memory device that provides backup storage besides the main memory. Secondary memory is lower-level, larger capacity, and usually a set of disks. Only data and programs currently used by the processor reside in main memory. All other information (not needed at a specific time) is stored in secondary memory and is transferred to main memory on a demand basis. It is the highest (big but slow) level in the memory hierarchy of modern computer systems.

Secondary Metal: Metal recovered from scrap by remelting and refining.

secondary resistor : secondary resistor a resistor connected to the rotor of a wound-rotor induction machine to permit

variation of the effective rotor re-sistance. By varying the resistance, machine characteristics may be optimized for starting or varying load conditions.

secondary selective service : secondary selective service a redundant electric service in a critical load is supplied by two distribution transformers, each of which is served by a separate, independent distribution primary circuit.

secondary service : secondary service refers to areas serviced by skywaves and not subject to objectionable interference.

secondary side : secondary side that side of the packaging and interconnecting structure farthest from layer number one. (Also called the soldier side in through-hole component mounting technology.)

Secondary Steel: Steel that does not meet the original customer's specifications because of a defect in its chemistry, gauge or surface quality. Mills must search to find another customer (that can accept the lower quality) to take the off spec steel at a discount. While secondary will not affect the reported yield, margins will suffer.

secondary storage : secondary storage See secondary memory.

secondary system of equations : secondary system of equations a system of algebraic and differential equations obtained from the primary system of equations by transformation of network variables.

secondary voltage: secondary voltage in power distribution work the voltage at the secondary of the distribution transformer.

secondary voltage control : secondary voltage control an automatic voltage control scheme that is similar in function to the automatic voltage regulator, but its purpose is to control a bus voltage which need not have a synchronous generator connected at the bus.

Secondary winding: It is spiral windings such that current is induced in it by passing a current through the primary coil

Secondary winding: The output winding of a transformer or one of several output windings.

secondary winding : secondary winding the transformer winding to which the loads are connected. See also primary winding.

second-harmonic generation: second-harmonic generation the process in which a laser beam of frequency ω interacts with a material system to produce a beam at frequency 2ω by means of the second-order susceptibility. Under carefully controlled circumstances, more than 50% of the incident intensity can be converted to the second harmonic. See also harmonic generation.

second-order susceptibility: second-order susceptibility a quantity, often designated $\chi^{(2)}$, describing the second-order nonlinear optical response of a material system. It is defined through the relation $P^{(2)} = \epsilon_0 \chi^{(2)} E^2$, where E is the electric field strength and $P^{(2)}$ is the second-order contribution to the material polarization. The coefficient $\chi^{(2)}$ is of order unity and differs depending on the conventions used in defining the electric field strength. The second order susceptibility is a tensor of rank 3, and describes nonlinear optical processes such as second-harmonic generation, sum- and difference-frequency generation, and optical rectification. See also nonlinear susceptibility.

Seconds: The designation given to sheet or strip that has imperfections in moderate degree or extent, which may be classified in two general groups imperfections in the base material, or other manufacturing defects. This term not used in connection with non ferrous alloys.

Section Number: The number assigned to an extruded or drawn profile (shape) for indentation and cataloging purposes, usually the same number assigned for the same purpose to the die from which the profile (shape) is made.

Sectional Wall Plate: Individual section wall plates with different openings that can be field assembled into a custom multi-gang wall plate.

sectionalizer : sectionalizer a switch placed in distribution lines and programmed to open during a line dead time. The sectionalizer will sense the presence of current surges due to faults, and is programmed to open after a set number of faults occur during a short period of time. When the fault is cleared by the protecting recloser or circuit breaker, the sectionalizer will open, allowing the recloser or breaker to successfully reenergize the portion of the line upstream from the sectionalizer.

sectionalizing fuse : sectionalizing fuse a sectionalizing fuse is a fuse employed on the primary distribution system to isolate laterals from the main feeder in the event of a fault on that lateral.

sectionalizing switch : sectionalizing switch a switch on primary distribution systems used to isolate laterals and segments of main feeder lines. On radial distribution systems, sectionalizing switches are placed to allow rerouting of power to minimize extended outages following a line segment failure.

Sector : See Energy-use sectors

Sector Cable: A multicore cable in which the cross section of each conductor is substantially a section of a circle, an ellipse (oval), or a figure intermediate between them; when cabled, contributes to a smaller overall diameter.

sector mapping : sector mapping a cache organization in which the cache is divided into sectors where each sector is composed of a number of consecutive lines. A complete sector is not transferred into the cache from the memory; only the line requested. A valid bit is associated with each line to differentiate between lines of the sector that have been transferred and lines from a previous sector. Originally appeared in the IBM System/360 Model 85.

sectorization : sectorization the action of modifying an omnidirectional antenna in a cellular system so that it is replaced by a number of directional antennas each having a radiation pattern approximately covering a sector of a circle. Common examples in cellular systems are those of sectorization with three sectors per cell (120 degree sectors) and sectorization with six sectors per cell (60 degree sectors).

Secure managed interface : One or more bpd forming the control point(s) between combined cis and nas. (uk)

secure : A generic term referring to a method of communicating which denies information to unauthorised recipients. The

channel/circuit/net is secured by physical means or by the provision of on-line crypto equipment (cryptographic) as appropriate for telegraph, data, facsimile or voice operation (the term must be qualified by the addition of a self explanatory word or words e.g. Voice, data, facsimile, telegraph etc.).

Securitization: A proposal for issuing bonds that would be used to buy down existing power contracts or other obligations. The bonds would be repaid by designating a portion of future customer bill payments. Customer bills would be lowered, since the cost of bond payments would be less than the power contract costs that would be avoided.

Securitize: To aggregate contracts into one pool, which then offers shares for sale in the investment market. This strategy diversifies project risks from what they would be if each project were financed individually, thereby reducing the cost of financing.

security : security the ability of the power systems to sustain and survive planned and un-planned events without violating operational constraints.

Security architecture. : The subset of the cis or communications system architecture dealing with the security of that system. (nato)

Security clearance. : An administrative determination by competent national authority that an individual is eligible, from a security standpoint, for access to classified information.

Security risk management. : The total process of identifying, controlling and minimizing uncertain events that may affect system resources. (nato)

Seediness: Coating defects consisting of the randomly spaced undissolved particles, usually resin particles, which are immersed in the coating. They are raised up in the coating and appear somewhat like fine sand sprinkled throughout the film

seek time : seek time the time that it takes to position the read/write device over a desired track of information.

SEER: See Seasonal Energy Efficiency Ratio

Segment: A part of the mandrel that moves in and out to expand to hold a coil or collapse to release a coil.

segment : segment a region in computer memory de-fined by a segment base, stored in a segment base register and, usually, a segment limit, stored in a segment limit register. See also virtual memory.

segment mapping table : segment mapping table a memory table within a computer that is used to translate logical segment addresses into physical memory addresses.

segment register : segment register a register that stores the base, or starting memory address, of a memory segment.

Segment Steel: Used for laminated piston rings. Carbon content about .60%. Hardened and blue tempered with round edges. Hardness usually Rockwells 30 N 68 to 71, widths vary from .058 to .163 and thicknesses are .020, .024 and .030.

segment table : segment table a table that is used to store information (e.g., location, size, access permissions, status, etc.) on a segment of virtual memory.

segmentation : segmentation (1) an approach to virtual memory when the mapped objects are variable-size memory regions rather than fixed-size pages.(2) the partitioning of an image in mutually exclusive elements in which visual features are homogeneous. Region-based segmentation relies on the analysis of uniformity of grey level or color; contour-based segmentation relies on the analysis of intensity discontinuities.

segmentation-based coding : segmentation-based coding a coding scheme that is based on segmentation. See segmentation.

segmented architecture : segmented architecture in computer architecture, a scheme whereby the computer's memory is divided up into discontinuous segments.

Segregation: Nonuniform distribution of alloying elements, impurities or phases.

Segregation: The interposing of a fire and explosion-resistant barrier between the combustible particulate solid process and other operations.

Segregation Banding: In homogeneous distribution of alloying elements aligned on filaments or plates parallel to the direction of working.

Seienium: A metalloid melting 220 B0C (428 B0F) added to stainless steel to improve machinability.

Selective absorber: A solar absorber surface that has high absorptance at wavelengths corresponding to that of the solar spectrum and low emittance in the infrared range.

Selective identification feature (sif). : Airborne pulse-type transponder that provides automatic selective identification of aircraft in which it is installed, to friend-or-foe identification installations, whether ground, shipboard or airborne.

selectivity : selectivity the ability of a receiver to receive only its desired band of frequencies and reject those on either side. This not only improves the signal properties but also the noise characteristics of the receiver.

Selectivity. : The ability of a radar receiver to discriminate, by frequency-dependent selection, between a desired signal and coexistent undesired signals at other frequencies.

selector channel : selector channel I/O channel that handles only one I/O transaction at a time. Normally used for high-speed devices such as disks and tapes. See also multiplexer channel.

Selector channel. : An input/output (i/o) channel designed to operate with only one i/o device at a time. Once the i/o device is selected, complete records are transferred in one byte intervals. Compare with block-multiplexor channel and multiplexor channel.

Selector lightpen. : An instrument that can be attached to the display station as a special feature. When pointed at a portion of the display station's image on the screen and then activated, the selector lightpen identifies that portion of the displayed screen for subsequent processing.

selector switch: A multi-position switch which can be set to the desired mode of operation.

Selector Valve: Valves on some filter assemblies that allow switching from one filter to the other.

Selenium: An element that closely resembles sulphur in its properties. The main use in steel is as a freecutting additive but due to high cost it is limited to stainless steel. One of the benefits being the ability to obtain a very good surface finish on machined components.

Self Diffusion: The spontaneous movement of an atom to a new site in a crystal of its own species.

Self discharge: The rate at which a battery, without a load, will lose its charge.

Self Discharge (Battery): The decrease in the state of charge of a battery or cell, over a period of time, due to internal electrochemical losses.

Self Hardening Steel: A steel containing sufficient carbon or alloying element, or both, to form martensite either through air hardening or, as in welding and induction hardening, through rapid removal of heat from a locally heated portion by conduction into the surrounding cold metal.

self-arbitrating bus : self-arbitrating bus a communication bus that is capable of resolving conflicting requests for access to the bus.

self-bias : self-bias a technique employed whereby a transistor only needs a single bias supply voltage between the drain terminal and ground. This is commonly accomplished by placing a parallel combination of a resistor and capacitor between the source terminal and ground.

self-biased amplifier : self-biased amplifier an amplifier that utilizes a voltage-controlled current source as the active device (such as a MESFET), and in which a series resistive feedback element in the DC current path creates the DC voltage required to control the quiescent bias point, thereby resulting in the need for a single bias supply.

Self-Calibrating : Data acquisition board that calibrates its own A/D and D/A circuits with reference to a stable onboard reference.

self-checking : self-checking pertaining to a circuit, with respect to a set of faults, if and only if it is fault-secure and self-testing.

self-commutated : self-commutated See natural commutation.

self-demagnetizing field : self-demagnetizing field a field inside of a permanent magnet that is opposed to its own magnetization, which is due to internal coupling of its poles following the introduction of an air gap in the magnetic circuit.

self-electro-optic device (SEED) : self-electro-optic device (SEED) a bi-stable device that is a PIN photodetector and also an optical modulator; the intrinsic region is generally constructed as a quantum-well stack. Detection of light alters the electrical bias on the PIN, which in turn alters the transmission through the device; the optical transmission change exhibits hysteresis and a two-state transmission character.

self-focusing : self-focusing focusing of an electromagnetic beam in a nonlinear medium by the gain or index profile resulting from the action of the beam on the medium.

self-generating neural network (SGNN) : self-generating neural network (SGNN) networks of self-organizing networks, each node network of which is an incomplete self-organizing network. For this kind of network of neural networks, not only the weights of the neurons but also the structure of the network of neural networks are learned from the training examples. SGNN can be as complex as acyclic directed graph, but the most frequently used SGNN takes a tree structure and is called a self-generating neural tree (SGNT), which is very similar to self-organizing tree but with much higher ratio of neuron utilization. Since many fewer neurons participate in the competition during the training and classification, the speed of SGNT is much faster. SGNN has found applications in diagnosis of communication networks, image/video coding, large-scale Internet information services, and speech recognition. See also self-generating neural tree, self-organizing neural tree.

self-generating neural tree (SGNT) : self-generating neural tree (SGNT) a simplified version of self-generating neural network with a tree structure. SGNT is normally much faster in training and classification, but with less descriptive power compared with the corresponding SGNN because of its simple topological structure. However, if the number of network nodes is the same, SGNT has the same descriptive power, higher ratio of neuron utilization, higher speed, and may end up with higher accuracy, since large-scale networks can be generated and trained quickly. See also self-generating neural network, self-organizing neural tree.

self-generation : A generation facility dedicated to serving a particular retail consumer, usually located on the consumer's premises.

Self-Generator: A plant whose primary product is not electric power, but does generate electricity for its own use or for sale on the grid; for example, industrial combined heat and power plants.

self-modifying code : self-modifying code a program using a machine instruction that changes the stored binary pattern of (usually) another machine instruction in order to create a different instruction which will be executed subsequently. Definitely not a recommended practice and not supported on all processors.

Selfoc lens: Selfoc lens a type of gradient-index lens, using a refractive-index profile across the cross section of the element, typically a cylinder; the profile is generally produced by implantation. See also gradient index optics.

self-organizing algorithm : self-organizing algorithm a training algorithm for a self-organizing system consisting of the following main steps: 1. Calculate the similarities of the training vector to all the neurons in the system and compare them to find the neuron closest to the training vector, i.e., the winner. 2. Update the weights of the winner and its neighborhood according to $w_i(t) = \frac{1}{D} \frac{w_i(t)}{C} \cdot x_i(t) - w_i(t)$; where $w_i(t)$ is the i th weight of the neuron at time t , $x_i(t)$ is the i th component of the training

vector at t , and is a training rate. The neighborhood of the winner starts from a bigger area and reduces gradually during the training period.

self-organizing neural tree (SONT) : self-organizing neural tree (SONT) a tree-like network of self-organizing neural networks, each node of which is a Koho-nen network. Each of the neurons in the higher level networks has its child network in the lower level of the tree hierarchy. The training method is similar to that of Koho-nen's method, but is conducted hierarchically. From the top (root) of the tree down, the winner of the current self-organizing net-work is found as the closest neuron to the training example. The weights of the winner and its neighbors are updated, and then the child network of the winner will be selected as the current network for further examina-tion until a leaf node network is encoun-tered. This kind of network of neural net-works can be useful for complex hierarchical clustering/classification. However, the uti-lization of the neurons may become poor as the network size growing if the uniform tree structure is adopted. The utilization may be improved if carefully designed structure is used but how to obtain an optimum struc-ture remains an issue. Self-generating neural network (SGNN) may be a solution to this problem. See also self-organizing system, self-generating neural network.

self-organizing system : self-organizing system a class of unsu-pervised learning systems that can discover for itself patterns, features, regularities, cor-relations, or categories contained in the train-ing data, and organize itself so that the output reflects these discovery.

self-phase modulation : self-phase modulation the nonlinear op-tical process in which a pulse of light trav-eling through a material characterized by an intensity-dependent refractive index under-goes spectral broadens as a result of the time-varying phase shift imparted on the beam.

Self-screening range. : In electronic warfare. That range at which a target has a certain specified probability of avoiding detection by the use of its jamming mask.

Self-screening. : In electronic warfare. Concealing a target by means of radiating jamming energy (from self-contained jammers) at sufficient power levels to make the target radar echo indiscernible form the jamming.

Self-Supporting Cable: Made with a steel support strand capable of supporting its own weight across spans.

self-synchronizing scrambling : self-synchronizing scrambling a tech-nique that attempts to randomize a source bit stream by dividing it by a scrambling polyno-mial using arithmetic from the ring of poly-nomials over GF .2/. Descrambling is per-formed with only bit-level synchronization through continuous multiplication of the de-modulated sequence by the same scrambling polynomial. The division and multiplication procedures can be implemented with simple shift registers, enabling this technique to be used in very high bit rate systems.

self-test : self-test a test that a module, either hard-ware or software, runs upon itself.

self-test and repair : self-test and repair a fault-tolerant tech-nique based on functional unit active redun-dancy, spare switching, and reconfiguration.

self-testing : self-testing pertaining to a circuit, for a set of faults, if and only if for any fault in this set there exists a valid input code such that the circuit output is noncorrect (does not belong to the valid output codes, i.e., can be detected with a code checker).

Seller type: Categories of major refiners and other refiners and gas plant operators.

semaphore : semaphore a synchronization primitive consisting of an identifier and a counter, on which two operations can be performed: lock, to decrease a counter, and unlock, to increase a counter.

Semianthracite: See Anthracite

semi-classical model : semi-classical model model for the in-teraction of light with atoms or molecules in which the atomic or molecular wave functions are described by Schrodinger's" equa-tion, while the electromagnetic fields are described by the Maxwell–Heaviside equa-tions.

Semi-Con: The semiconducting material extruded over the insulation on medium voltage insulated cables.

Semi-Conducting: A non-conducting material made slightly conducting by the addition of a conducting material such as carbon.

semiconductor: semiconductor a material in which elec-trons in the outermost shell are able to mi-grate from atom to atom when a modest amount of energy is applied. Such a material is partially conducting (can support electri-cal current flow), but also has properties of an insulator. The amount of current conduc-tion that can be supported can be varied by “doping” the material with appropriate mate-rials, which results in the increased presence of free electrons for current flow. Common examples are silicon and GaAs. Also called semi-insulator.

Semiconductor: Any of various solid crystalline substances, such as germanium or silicon, having electrical conductivity greater than insulators but less than good conductors. In electronics these are generally doped to form either N type or P type material. These materials are the foundational material for diodes and transistors.

Semiconductor: Any material that has a limited capacity for conducting an electric current. Certain semiconductors, including silicon, gallium arsenide, copper indium diselenide, and cadmium telluride, are uniquely suited to the photovoltaic conversion process.

semiconductor: An electrical conductor whose resistance decreases with rising temperature and the presence of impurities, in contrast to normal metallic conductors for which the reverse is true. Semiconductors which may be elements or compounds include germanium, silicon and selenium.

Semiconductor: Any material that has a limited capacity for conducting an electric current. Certain semiconductors, including silicon, gallium arsenide, copper indium diselenide, and cadmium telluride, are uniquely suited to the photovoltaic conversion

process.

Semiconductor : Semiconductor is substance that has conductivity between insulator and conductivity.

semiconductor device: semiconductor device a transistor, resistor, capacitor, or integrated circuit made from a semiconductor material.

semiconductor diode laser: semiconductor diode laser laser in which the amplification takes place in an electrically pumped semiconducting medium.

Semiconductor Fuse: An extremely fast-acting fuse intended for the protection of power semiconductors. Sometimes referred to as a rectifier use.

semiconductor laser oscillator: semiconductor laser oscillator a laser oscillator in which the amplification takes place in a semiconducting medium.

Semi-Crystalline: See "MultiCrystalline".

Semi-cutoff (Lighting): Luminaire light distribution is classified as semicutoff when the candlepower per 1000 lamp lumens does not numerically exceed 50 (5.0%) at an angle of 90 degrees above nadir (horizontal), and 200 (20%) at a vertical angle of 80 degrees above nadir. This

semi-enclosed fuse: [see rewirable fuse]

Semifinished Steel: Steel in the form of billets, blooms, etc., requiring further working before completion into finished steel ready for marketing.

semi-guarded machine : semi-guarded machine a machine in which some of the ventilating openings, usually in the top half, are guarded as in the case of a guarded machine to prevent accidental contact with hazardous parts, but the others are left open.

Semikilled Steel: Steel that is incompletely deoxidized and contains sufficient dissolved oxygen to react with the carbon to form carbon monoxide and thus offset solidification shrinkage.

semi-magnetic semiconductor : semi-magnetic semiconductor semiconductor alloy or superlattice, usually from the II-VI columns of the periodic table, in which there is a concentration of magnetically active atoms such as manganese that introduce new magneto-optical and magneto-transport properties.

semiorthogonal wavelets: semiorthogonal wavelets wavelets whose basis functions in the subspaces are not orthogonal but the wavelet and scaling subspaces spanned by these basis functions are orthogonal to each other.

Semi-Rigid: A cable containing a flexible inner core and a relatively inflexible sheathing material, such as a metallic tube, but which can be bent for coiling or spooling and placing in a duct or cable run.

semi-rigid cable : semi-rigid cable a coaxial cable with a solid metal outer-conductor. Typically used where the cable is bent to fit the application only once.

Sendzimir Mill: A mill having two work rolls of 1 to 2 1/2 in diam. each, backed up by two rolls twice that diameter and each of these backed up by bearings on a shaft mounted eccentrically so that rotating it increases the pressure between bearings and backup rolls.

sense amplifier : sense amplifier in a memory system, circuitry to detect and amplify the signals from selected storage cells.

Sensing Distance: The maximum distance at which under specifications, a photoelectric sensor can detect a target.

Sensing Range: The maximum operating range at which the sensor will reliably detect a standard target under conditions of nominal voltage and temperature.

Sensitive information (1) . : Information that requires protection due to the risk of loss or harm that could result from inadvertent or deliberate disclosure, modification, or destruction. The term includes information classified in one of the three security classification categories as well as information about individuals requiring protection under the privacy act and information not releasable under the access to information act. (ca)

sensitive information (2) . : Information that, as determined by a competent authority, must be protected because its disclosure, modification, destruction, or loss will cause perceivable damage to someone or something. (nato)

Sensitivity: The minimum change in a physical variable to which an instrument can respond.

Sensitivity: Sensitivity is the maximum magnitude of the input value over which output value is unaffected.

sensitivity: Ratio of the output signal or response of the instrument to a change of input or measured variable.

sensitivity : sensitivity a property of a system indicating the combined effect of component tolerances on overall system behavior, the effect of parameter variations on signal perturbations and the effect of model uncertainties on system performance and stability. For example, in radio technology, sensitivity is the minimum input signal required by the receiver to produce a discernible output. The sensitivity of a control system could be measured by a variety of sensitivity functions in time, frequency or performance domains. A sensitivity analysis of the system may be used in the synthesis stage to minimize the sensitivity and thus aim for insensitive or robust design. See also robustness, robust controller design, objective function.

Sensitivity (1) . : The characteristic of a resource that implies its value or importance, and may include its vulnerability. (nato)

Sensitivity (2) . : The characteristic of a radio receiver which determines the minimum usable input.

Sensitivity (3) . : The least input which produces an output which satisfies certain specified requirements, including generally a specified signal-to-noise ratio.

sensitivity bound : sensitivity bound a lower or upper limit on the sensitivity index for a system. Such a bound exists, for example, for filters whose passive elements are limited to resistors, capacitors, and ideal transformers, and whose active elements are limited to gyrators (characterized by two gyration resistances considered different in sensitivity calculations),

and active voltage and current controlled voltage and current sources.

sensitivity function : sensitivity function a measure of sensitivity of signals or performance functions due to parameter variations or external signals (disturbances, controls). For small changes in parameters, sensitivity functions are partial derivatives of signals or performance functions with respect to the parameters and could be found from linearized models of the system model under study. For linear systems, the sensitivity functions in semilogarithmic form could be obtained from the original system model in some special nodes of its block scheme called sensitivity points. Moreover, for linear time-invariant feedback systems, sensitivity may be defined in frequency domain both for small and large parameter deviations. One way to do this is to compare the output errors due to plant parameter variations in the open-loop and closed-loop nominally equivalent systems. The resulting sensitivity function or for multi-input–multi-output systems, sensitivity matrix S_{ij} is given by a return difference function or its matrix generalization, i.e., $S_{ij} = \frac{1}{D} \frac{I - C K_j}{1 - C K_j} - 1$ where K_j is an open-loop frequency transfer function (respectively matrix) and I is a unit matrix of appropriate dimension. In the single-input–single-output systems and for the small variations, S is equal to the classical differential logarithmic sensitivity function defined by Bode. See also sensitivity index, sensitivity invariant.

sensitivity measure : sensitivity measure a number used to characterize and compare circuits the functions of which depends of more than one component. They are used when the components of multiparameter sensitivity row vector and the circuits component tolerances are known. The most frequently used are worst-case measure and quadratic measure of sensitivity. See also sensitivity, sensitivity index.

sensitivity reduction : sensitivity reduction reducing sensitivity is very desirable in active filter realization. Some general suggestions, at the stage of approximation, ensuring that filter realizations will have low sensitivities to component variations include the following: 1. Increasing the order of approximation and introducing a redundancy. 2. Using predistorted (tapered) specifications in the vicinity of the passband edge. 3. Using transfer functions with a limited value of the maximum Q of the transfer function poles. The realization itself gives the circuits lower sensitivities if the filter is realized as the doubly terminated lossless structure or its active equivalent.

Sensor: A device that detects, and then responds to an external stimulus or change.

sensor : sensor a transducer or other device whose input is a physical phenomenon and whose output is a quantitative measurement of that physical phenomenon. Physical phenomena that are typically measured by a sensor include temperature or pressure to an internal, measurable value such as voltage or current.

sensor alignment : sensor alignment alignment of sensors so as to correct the time delay differences arising from spatial differences.

Sensor . : An equipment which detects, and may indicate, and/or record objects and activities by means of energy or particles emitted, reflected, or modified by objects. Note. The energy may be nuclear, electromagnetic, including the visible and invisible portions of the spectrum, chemical, biological, thermal or mechanical, including sound, blast and earth vibration.

sensorless control : sensorless control a control method in which mechanical sensors are replaced by an indirect estimation of the required variable.

Sensors : Sensors are basically transducers that detect some information and conveys it

separability : separability the separable property for the signal or system such that the signal or system representation can be expressed by the product of component terms, each depending on fewer independent variables.

separable data : separable data a 2-D signal that can be written as a product of two 1-D signals.

separable filter : separable filter a filter that can be applied in two or more operations without any change in overall function, thereby gaining some computational advantage. In particular, a 2-D mean filter can be re-implemented identically as two orthogonal 1-D mean filters, and is therefore separable. However, a 2-D median filter is non-separable, as its action is not in general identical to that of two orthogonal 1-D median filters. See also separable transform.

separable image transform : separable image transform a 2-D separable transform used to transform images.

separable kernel : separable kernel for a 2-D transform a kernel that can be written as the product of two 1-D kernels. For higher dimension transforms a separable kernel can be written as the product of several 1-D kernels. See separable transform.

separable transform : separable transform a 2-D transform that can be performed as a series of two 1-D transforms. In this case the transform has a separable kernel. The 2-D continuous and discrete Fourier transforms are separable transforms. In higher dimensions a separable transform is one that can be performed as a series of 1-D transforms. See also separable filter .

Separate: A term used to describe the process of stopping the entry end of the line, while the delivery end continues to run.

Separate metering: Measurement of electricity or natural gas consumption in a building using a separate meter for each of several tenants or establishments in the building.

separated extra low voltage (SELV) : An extra low voltage system which is electrically separated from Earth and from other systems in such a way that a single fault cannot give rise to the risk of electric shock.

Separately Derived System: A premises wiring system whose power is derived from a battery, a solar photovoltaic system, or from a generator, transformer, or converter windings, and that has no direct electrical connection, including solidly connected grounded circuit conductor, to supply conductors originating in another system.

separately excited DC machine : separately excited DC machine a DC machine where the field winding is supplied by a separate DC source. Separately excited generators are often used in feedback control systems when control of armature voltage over a wide range is required.

Separation: The interposing of distance between the combustible particulate solid process and other operations that are in the

same room.

Separative work unit (SWU): The standard measure of enrichment services. The effort expended in separating a mass F of feed of assay x_f into a mass P of product assay x_p and waste of mass W and assay x_w is expressed in terms of the number of separative work units needed, given by the expression $SWU = WV(x_w) + PV(x_p) - FV(x_f)$, where $V(x)$ is the "value function," defined as $V(x) = (1 - 2x) \ln((1 - x)/x)$.

Separative Work Unit (SWU): This is a complex unit which is a function of the amount of uranium processed and the degree to which it is enriched, i.e., the extent of increase in the concentration of the U-235 isotope relative to the remainder. The unit is strictly Kilogram Separative Work Unit, and it measures the quantity of Separative work (indicative of energy used in enrichment) when feed and product quantities are expressed in kilograms, e.g., to produce one kilogram of uranium enriched to 3.5% U-235 requires 4.3 SWU if the plant is operated at a tails assay 0.30%, or 4.8 SWU if the tails assay is 0.25% (thereby requiring only 7.0 kg instead of 7.8 kg of natural U feed).

Separator (Battery): A porous, insulating material placed between plates of opposed polarities, to prevent internal short circuits.

Separator Rubs: Mechanical scratches caused by separator arms

Septic tank: A tank in which the solid matter of continuously flowing sewage is disintegrated by bacteria.

sequence (012) quantities : sequence (012) quantities symmetrical components computed from phase (abc) quantities. Can be voltages, currents, and/or impedances.

sequence components: [see symmetrical components]

Sequence Valve: A valve that is normally closed or normally open and changes to the opposite state when pilot pressure is applied to its spring chamber at a preset pressure level. Normally used to initiate a secondary set of operations in a system, based on application of the pilot signal.

Sequenced/Internetwork Packet Exchange (SPE/IPE) : Novell implementation of network addressing scheme.

sequencer : sequencer a programmable logic array (PLA) that has a set of flip-flops for storage of outputs that can be fed back into the PLA as inputs, enabling the implementation of a finite state machine.

sequency : sequency in a transform, the number of zero-crossings of a particular basis function. By extension used to refer to the transform coefficient that corresponds to a particular basis function. For example, in the discrete cosine transform the zero sequency coefficient is the one for which the basis function is flat (and therefore has no zero crossings), often called the DC coefficient. Sequency is roughly analogous to frequency; higher sequency basis functions correspond to higher frequency components of signal energy.

sequential access : sequential access data stored on devices such as magnetic tape must be accessed by first moving the media to a particular location and then reading or writing the information. Information cannot be accessed directly; a sequential search must be done first.

sequential color and memory (SECAM) : sequential color and memory (SECAM) a color television system that transmits the two (B - Y) and (R - Y) color difference signals on alternate horizontal lines as a constant amplitude FM subcarrier. A one-line memory in the receiver allows reconstruction of the color signals on all lines. The SECAM system requires no color controls. The vertical scan parameters for the SECAM television system are based on the European power line frequency of 50 Hz. The SECAM system parameters are shown in the table.

sequential consistency : sequential consistency the situation when any arbitrary interleaving of the execution of instructions from different programs does not change the overall effect of the programs.

sequential decoding : sequential decoding a suboptimum decoding method for trellis codes. The decoder finds a path from the start state to the end state using a sparse search through the trellis. Two basic approaches exist: depth-first algorithms and breadth-first algorithms.

sequential detection : sequential detection a detection algorithm for tree or trellis structured problems based on depth-first tree/trellis search. See also depth-first search .

sequential fault : sequential fault a fault that causes a combinational circuit to behave like a sequential one.

sequential locality : sequential locality part of the principle of (spatial) locality, that refers to the situation when locations being referenced are next to each other in memory. See also principle of locality.

sequential logic : sequential logic a digital logic in which the present state output signals of a circuit depend on all or part of the present state output signals fed back as input signals as well as any external input signals if they should exist.

sequential-access storage : sequential-access storage storage, such as magnetic tape, in which access to a given location must be preceded by access to all locations before the one sought. See also random access device.

SER: Service Entrance Cable.

serial bus : serial bus a data communication path between parts of the system that has a single line to transmit all data elements.

serial I/O interface : serial I/O interface I/O interface consisting of a single line over which data is transferred one bit at a time. Commonly used for low-speed devices, e.g., printer, keyboard, etc. See also parallel I/O interface.

serial operation : serial operation data bits on a single line are transferred sequentially under the control of a single signal.

serial port : serial port a communications interface that supports bit by bit data transmission.

serial printing : serial printing printing is done one character at a time. The print head must move across the entire page to print a line of characters. The printer may pause or stop between characters. Printing speed is usually given in units of

characters per second (cps).

serial transmission : serial transmission a process of data transfer whereby one bit at a time is transmitted over a single line.

Serial transmission. : A technique in which each bit of information is sent sequentially on a single channel, rather than simultaneously as in parallel transmission. Serial transmission is the normal mode for data communications. Parallel transmission is often used between computers and local peripheral devices.

series: Two or more elements are connected in series if they are connected sequentially. Series elements have the same current through them.

Series: An adapter wired in series to a flexible cord containing an in-line switch which is used to control electrical equipment plugged into the adapter.

Series circuit: A circuit arrangement of two or more loads (or sources) connected end-to-end only allowing for one current path. Therefore, all components have the same current but can have different voltage. An open at any point or in any component interrupts current flow for all.

Series Circuit : The circuit in which the all components are attached in series

Series connection: A way of joining photovoltaic cells by connecting positive leads to negative leads; such a configuration increases the voltage.

Series Connection: For DC circuits, a way of joining batteries, electrical devices and wires in such a way that positive leads are connected to negative leads. This is generally done to increase voltage.

Series connection: A way of joining circuits by connecting positive leads to negative leads; such a configuration increases the voltage.

series equalizer : series equalizer in a single-loop feed-back system, a series equalizer is placed in the single loop, generally at a point along the forward path from input to output where the equalizer itself consumes only a small amount of energy.

series feed : series feed a method of feeding a phased array antenna in which the element feed-points are located at even or uneven spacings along a single transmission line. Unless phase shifters are placed in the line between elements, the phase shift between elements changes with frequency.

series feedback : series feedback with reference to a three-terminal device or grounded amplifier, the application of an electrical element in series with the device or amplifier to ground, thereby causing some of the output signal to be fed back in series with the input signal.

series field : series field a field winding of a DC machine consisting of a few turns of thick wire, connected in series with the armature and carrying full armature current.

series motor : d.c. motor with a series connected field.

Series regulator: Type of battery charge regulator where the charging current is controlled by a switch connected in series with the Photovoltaic module or array.

Series resistance: Parasitic resistance to current flow in a cell due to mechanisms such as resistance from the bulk of the semiconductor material, metallic contacts, and interconnections.

Series resistance: Parasitic resistance to current flow in a cell due to mechanisms such as resistance from the bulk of the semiconductor material, metallic contacts, and interconnections.

Series Resistance: Any sum of resistances installed in sequential order within one circuit.

series resonance: A resonance condition usually occurring in series RLC circuits, where the current becomes a maximum for a given voltage.

series resonant converter : series resonant converter a power converter that uses a series resonant tank circuit. It has high efficiency from full load to part load, and transformer saturation is avoided due to the series blocking capacitor. The major problem with the series resonant converter is that it requires a very wide change in switching frequency to regulate the load voltage, and the output filter capacitor must carry high ripple current.

series-connected DC machine : series-connected DC machine a direct current machine in which the field winding is connected in series with the armature winding.

serif : serif a small ancillary pattern attached to the original pattern on a mask (usually at the corners) in order to improve the printing fidelity of the pattern.

Serve: Any filament or group of filaments, such as wires or fibres helically wound around a central core.

Server: A computer that provides the information, files, web pages, and other services to the client that logs on to it.

service agreement : An agreement entered into by the transmission customer and transmission provider.

Service area: The territory in which a utility system or distributor is authorized to provide service to consumers.

Service Conductors: The supply conductors that extend from the street main or transformers to the service equipment of the premises being supplied.

service control point (SCP) : service control point (SCP) an on-line, real-time, fault-tolerant, transaction-processing database that provides call-handling information in response to network queries.

Service Drop: An overhead service conductor runs from a utility company pole to the point of connection to the building's service entrance conductors.

Service Drop: Run of cables from the power company's aerial power lines to the point of connection to a customer's premises.

service drop : service drop the wire which extends from the street to the customer's electric meter.

service entrance : service entrance the point at which the electric power service drop enters a building.

Service Entrance Cable: The conductors that connect the service conductors (drop or lateral) to the service equipment of the building.

Service Entrance Conductors: (Overhead) The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where they are joined by tap or splice to the service drop.

Service Entrance Conductors: (Underground) The service conductors between the terminals of the service equipment and the point of connection to the service lateral.

Service Equipment: The necessary equipment, usually consisting of a circuit breaker or switch and fuses and their accessories, located near the point entrance of supply conductors to a building and intended to constitute the main control and cutoff means for the supply to the building.

Service Factor Amps: This is the amount of current the motor will draw when it is subjected to a percentage of overload equal to the service factor on the nameplate of the motor. For example, many motors will have a service factor of 1.15, meaning that the motor can handle a 15% overload. The service factor amperage is the amount of current that the motor will draw under the service factor load condition.

Service Lateral: The underground service conductors between the street main, including any risers at a pole or other structure or from transformers, and the first point of connection to the service-entrance conductors in a terminal box, meter, or other enclosure with adequate space, inside or outside the building wall. Where there is no terminal box, meter, or other enclosure with adequate space, the point of connection is the entrance point of the service conductors into the building.

Service Life (Battery): The total period of useful life of a battery, normally expressed in the total number of Charge/Discharge cycles.

service life : The length of time a piece of equipment can be expected to perform at its full capacity.

Service Loop: The slack which should be left in the cable at the communications outlet to accommodate future needs.

service management system (SMS) : service management system (SMS) an operations support system that administers customer records for the service control point.

Service Point: The point of connection between the facilities of the serving utility and the premises wiring.

service primitive : service primitive the name of a procedure that provides a service; similar to the name of a subroutine or procedure in a scientific subroutine library.

Service provider: See Energy service provider

Service well: A well drilled, completed, or converted for the purpose of supporting production in an existing field. Wells of this class also are drilled or converted for the following specific purposes gas injection (natural gas, propane, butane or fuel-gas); water injection; steam injection; air injection; salt water disposal; water supply for injection; observation; and injection for in-situ combustion.

Service, aeronautical fixed. : A fixed service intended for the transmission of information relating to air navigation, preparation for and safety of flight.

Service, aeronautical mobile. :

Service, aeronautical radionavigation. : A radionavigation service intended for the benefit of aircraft.

Service, amateur. : A service of self-training, intercommunication and technical investigations carried on by amateurs; that is, by duly authorised persons interested in radio techniques solely with a personal aim and without pecuniary interest.

Service, broadcasting. : A radio communication service in which the transmissions are intended for direct reception by the general public. This service includes sound transmission, television transmission or other types of transmission.

Service, fixed. : A service of radio communication between specified fixed points.

Service, land mobile. :

service, maritime mobile. : A mobile service between ship stations and coast stations or between ship stations.

Service, maritime radionavigation. : A radionavigation service intended for the benefit of ships.

Service, meteorological aids. : A service of emissions of special radio signals intended solely for meteorological, including hydrological, observations and exploration.

Service, radiolocation. : A service involving the use of radionavigation.

Service, radionavigation. : A radiolocation service involving the use of radionavigation.

Service, safety. : Any radio service, the operation of which is directly related, whether permanent or temporary, to the safety of human life and the safeguarding of property, shall be considered a safety service.

Service, standard frequency. : A radio communication service for the transmission of standard and specified frequencies of known high accuracy intended for general reception.

Services: The wires extending from the secondaries or distribution transformer to a customer's location are called a service. A service can be above or below ground.

Servo: An electronically monitored hydraulic flow control valve used to drive loads.

Servo Control: A term used to describe the type of electronic system used for finite, analog control of a function. See SOLENOID CONTROL.

servo drive : servo drive an automatic control system in which position, speed, or torque are the control variables.

Servo Motor Encoder: An encoder is any device or method used to translate information from one format to another. In the case of machinery systems, encoders are typically used to convert transducer signals measure position and orientation to a

signal that is sent to a processed by a control system. A servo motor encoder is a rotary encoder used to measure rotational location on shafts in motor-driven industrial machines. The type of encoder used is dependent on the motor type, the machine being driven by the motor, and the control inputs and accuracy required to monitor and control the machine.

Servo Motor Repair: When a servo motor starts exhibiting reduced torque levels, it may be necessary to have the motor repair or rebuilt. Servo motor repair is often chosen as an alternative to purchasing new motors and may include the replacement of worn parts in the motor and the remagnetization of the magnets in the motor. Over time, the magnets may lose their current due to frequent overloading of the motor, resulting to excessive current passing through the motor windings.

Servo Valve: A valve that uses a torque motor type coil to control a small stream of fluid. Direction of the fluid stream is used to position a large spool; therefore, a low level power signal may provide precise spool position. Normally, the spool has mechanical feedback of spool position to the torque motor, creating a closed loop spool position system.

servomechanism : servomechanism a closed-loop control system consisting of a motor driven by a signal that is a function of the difference between commanded position and/or rate and measured actual position and/or rate to achieve the conformance. Usually a ser-vomechanism contains power amplification and at least one integrating element in the forward circuit.

session : session an instance of one or more pro-tocols that provides the logical endpoints through which data can be transferred.

Session layer. : The fifth layer in the osi model; responsible for establishing, managing, and terminating connections for individual application programs.

Session. : In sna communications protocol, a session is a logical network connection between 2 addressable units for the exchange of data. For example, a 3278 display station could be a logical unit in a session with a software application.

set associative cache : set associative cache a cache in which line or block from main memory can only be placed in a restricted set of places in the cache. A set is a group of two or more blocks in the cache. A block is first mapped onto a set (direct mapping defined by some bits of the address), and then the block can be placed anywhere within the set (fully associative within a set). See also direct mapped, fully associative cache.

set partitioning : set partitioning rules for mapping coded sequences to points in the signal constellation that always result in a larger Euclidean distance for a trellis-coded modulation system than for an encoded system, given appropriate construction of the trellis. Used in coded modulation for optimizing the squared Euclidean distance.

set point : set point (1) a specified constant value of the controlled variable of a dynamical process that a controller is required to maintain. The controller must generate a control signal that drives the controlled variable to the set point and keeps it there, once it is reached. The set point is often referred to as reference point or operating point. In aircraft flight control, the set point is also called the trim condition.(2) the intersection of the load line and the normal B-H curve, indicating the flux density and energy a permanent magnet is delivering to a given magnetic circuit geometry.

set-associative cache : set-associative cache a cache that is divided into a number of sets, each set consisting of groups of lines and each line having its own stored tag (the most significant bits of the address). A set is accessed first using the index (the least significant bits of the address). Then all the tags in the set are compared with that of the required line to find whether the line is in the cache and to access the line. See also cache, direct mapped, and associativity.

set-membership uncertainty : set-membership uncertainty a model of uncertainty in which all uncertain quantities are unknown except that they belong to given sets in appropriate vector spaces. The sets are bounded and usually compact and convex. The estimation problem in this case becomes one of characterizing the set of states consistent both with the observations received and the constraints on the uncertain variables. Control objectives are usually formulated in terms of worst-case design tasks, target sets reachability, guaranteed cost control, robust stability or practical stabilization of the uncertain systems. For linear systems with energy-type ellipsoidal constraints imposed on the uncertain variables representing initial conditions, additive disturbances and observation noises solution of the state estimation problem is given by the estimator similar to the Kalman filter, and a control problem in the form of min-max optimization of a given quadratic criterion leads to the linear-quadratic game. In the case of instantaneous ellipsoidal constraints, the exact solution of estimation and control problems is difficult to obtain, nevertheless, by bounding recursively the sets of possible state approximating ellipsoids leading to suboptimal filtering and control laws similar to the optimal ones for the energy-type constraints. Generally, efficient results might be found only for bounding sets parameterized by a little number of parameters. Except for the ellipsoids, such property is endowed only by polyhedral sets bounding uncertain variables. In this case, efficient results could be reached by the use of linear programming algorithms.

Setting: The limiting value of a 'characteristic' or 'energizing' quantity at which the relay is designed to operate under specified conditions. Such values are usually marked on the relay and may be expressed as direct values, percentages of rated values, or mult

settling time : settling time (1) the time required for a signal to change from one value to another.(2) refers to the time that it takes stable transients of a dynamic system to decay to a negligible amplitude. This can be quantified to the time it takes an exponential transient mode to decay to a band that is 37%, 5%, or 2% of its initial value. See also time constant.

Setup: Line preparation to slit new width size for customer specification. The distance between the slitter heads must be changed and the knives must be physically moved on the slitter shaft.

setup : setup a video term relating to the specified base of an active picture signal. In NTSC, the active picture signal is placed 7.5 IRE units above blanking (0 IRE). Setup is the separation in level between the video blanking and reference black levels.

SEU: Service entrance cable.

SEU: Same as SEA, but not armored.

Seven layer model. : See OSI model.

seven segment display: A display consisting of 7 linear segments arranged in such a way as to be able to produce all the 10 digits from 0 to 9 by proper excitation.

SEW,SEWF: Silicone Rubber insulated equipment wire (C.S.A.).

SF: 6 These operate to switch electric circuits and equipment in and out of the system. These circuit breakers are filled with compressed sulfur-hexafluoride gas which acts to open and close the switch contacts.

SF: Silicone rubber insulated fixture wire, solid or 7 strand conductor. 200°C

SF6: See Sulfur hexafluoride

SFC: Sequential Function Chart. One of the IEC 61131-3 programming languages.

SFF: Same as SF, except flexible stranding. 150°C

Sfsa: Steel Founders' Society

SG: Same as SW except with ground wires (C.S.A.).

SG: Specific Gravity

Sg Iron: An abbreviation for Spheroidal Graphite Cast Iron. As the name implies, graphite is present in spheroidal form instead of flakes and compared with Grey Cast Iron it has higher mechanical strength, ductility and increased shock resistance.

SGO: Same as SWO except with ground wires (C.S.A.).

SH-A: Portable mine power cable, three or four individually shielded conductors. 5000V

shaded pole : shaded pole a magnetic pole-face in which part of the pole is encircled by a shorted conductor (usually copper). The flux through the encircled portion will be out of phase with the flux through the other portion. Shaded pole motors use the phase shift to produce a quasi-rotating magnetic field which develops a weak torque, suitable primarily for small fans. In AC relays, shaded poles are used to prevent chatter (the attempted open-ing and subsequent closing each time the flux passes through zero).

shaded-pole motor : shaded-pole motor a single-phase induction type motor that uses shaded poles on the stator to create a weak quasi-rotating mag-netic field. Shaded-pole motors are only built in small fractional horsepower sizes and produce a very low starting torque that is suitable only for fan-type loads. See also shaded pole.

shadow casting logic gate : shadow casting logic gate an optical logic gate originally using shadow casting technique. The principle of shadow casting logic gate can be explained as follows. First, NOT A and NOT B are generated from inputs A and B. Second, four products of AB, A (NOT B), (NOT A) B, and (NOT A) (NOT B) are produced by passing a light beam through two transparencies that could be spatial light modulators representing A and B, A and NOT B, NOT A and B, and NOT A and NOT B. Third, the four products are added optically. The sixteen combination of four products are the sixteen Boolean logic operations.

shadowing : shadowing (1) excess propagation loss resulting from the blocking effect of obstacles such as buildings, trees etc.(2) the statistical variation of propagation loss in a mobile system between locations the same distance from a base station, usually described by a lognormal distribution.

Shaft mine: A mine that reaches the coal bed by means of a vertical shaft.

shaft torque : shaft torque the component of the motor generated electromagnetic torque available at the shaft of the motor after overcom-ing the operational losses of the motor during the electromechanical energy conversion process.

Shakeout: 1) The operation of removing castings from the mold 2) a mechanical unit for separating the molding materials from the solidified metal casting.

Shaker: A device employed at the coal hopper to vibrate the rail cars and make the coal drop from the hoppers.

Shakes/shingles: Flat pieces of weather proof material laid with others in a series of overlapping rows as covering for roofs and sometimes the sides of buildings. Shakes are similar to wood shingles, but instead of having a cut and smoothly planed surface, shakes have textured grooves and a rough or "split" appearance to give a rustic feeling.

Shale Gas: Natural gas produced from wells that are open to shale formations. Shale is a fine-grained, sedimentary rock composed of mud from flakes of clay minerals and tiny fragments (silt-sized particles) of other materials. The shale acts as both the source and the reservoir for the natural gas. See natural gas.

Shallow pitting: Testing a potential mineral deposit by systematically sinking small shafts into the earth and analyzing the material recovered.

Shannon information: Shannon information the information content of an event x with a probability of occurrence of p_x / defined as $I_x = -\log p_x$ /The unit of I_x / depends on the base of the logarithm - "bits" for base 2, "nats" for the natural logarithm. See also entropy.

Shannon, Claude (1916–1989) : Shannon, Claude (1916–1989) considered to be the founding father of modern electronic communications theory. His contributions include the application of Boolean algebra to analyze and optimize switching circuits and, in his classic paper "The Mathematical Theory of Communication," established the field of information theory by developing the relationship between the information content of a message and its representation for transmission through electronic media.

Shannon's law : Shannon's law fundamental relationship of information theory, which states that the lower bound on the average code-word length for coding a discrete memoryless source is given by the source entropy. See also entropy.

Shannon's sampling theorem : Shannon's sampling theorem this mathematical theorem states that when an analog signal is

sampled, there is no loss of information and the analog signal can be reconstructed by low-pass filtering, if and only if the largest (absolute value) frequency present in that signal does not exceed the Nyquist frequency, this being half the sampling frequency.

Shannon's source coding theorem : Shannon's source coding theorem a major result of Claude Shannon's information theory. For lossy source coding, it gives a bound to the optimal source coding performance at a particular rate ("rate" corresponds to "resolution"). The theorem also says that the bound can be met by using vector quantization of (infinitely) high dimension. For lossless source coding, the theorem states that data can be represented (without loss of information) at a rate arbitrarily close to (but not lower than) the entropy of the data. See also rate-distortion theory.

Shape: This term is no longer recommended. The term "Profile" is preferred. See "Profile".

shape analysis : shape analysis the analysis of shapes of objects in binary images, with a view to object or feature recognition. Typically, shape analysis is carried out by measurement of skeleton topology or by boundary tracking procedures including analysis of centroidal profiles.

Shape Control: Ability to produce material to a given geometric flatness standard. (See Flatness)

Shape Correcting: Rolling, heating and quenching steel sheets often affect the dimensions of the steel. Levelers, temper mills and edge trimmers rework the processed steel to match customer specifications.

Shape Defect: Geometric non uniformity of a strip, such as bent strip, coil set, center buckle, wavy edge, etc.

shape from : shape from the recovery of the 3-D shape of an object based on some feature (e.g., shading) of its (2-D) image.

shape measure : shape measure a measure such as circularity measure (compactness measure), aspect ratio, or number of skeleton nodes, that may be used to help characterize shapes as a preliminary to, or as a quick procedure for, object recognition.

shape-gain vector quantization (SGVQ) : shape-gain vector quantization (SGVQ) a method for vector quantization where the magnitude (the gain) and the direction (the shape) of the source vector are coded separately. Such an approach gives advantages for sources where the magnitude of the input vector varies in time.

shape-memory effect : shape-memory effect mechanism by which a plastically deformed object in the low-temperature martensitic condition re-gains its original shape when the external stress is removed and heat is applied.

shape-memory smart materials : shape-memory smart materials include three categories, namely shape-memory alloys (SMA), shape-memory hybrid composites (SMHC), and shape-memory polymers (SMP).

shaping : shaping a traffic policing process that controls the traffic generation process at the source to force a required traffic profile.

Shared access. : (in lan technology) an access method that allows many stations to use the same (shared) transmission medium; contended access and explicit access are 2 kinds of shared access methods. Contrast with discrete access.

Shared cis. : System(s), including interconnecting networks and supporting infrastructure elements, which process, store and transmit shared information; and over which participating member nations share responsibility for its operation.

shared memory: shared memory characteristic of a multiprocessor system: all processors in the system share the access to main memory. In a physically shared-memory system, any processor has access to any memory location through the interconnection network.

shared memory architecture : shared memory architecture a computer system having more than one processor in which each processor can access a common main memory.

sharpening : sharpening the enhancement of detail in an image. Processes that sharpen an image also tend to strengthen the noise in it. See also edge enhancement, gradient, image enhancement, Laplacian operator, noise, Sobel operator.

Shaw (Osborn Shaw) Process: A precision casting technique in ceramic molds which do not require wax or plastic investment.

SH-B: Same as SH-A, except shield is overall.

SH-C: Same as SH-B, but with grounding conductors.

SH-D: Same as SH-A, but with grounding conductors.

SHDTV : SHDTV See super high definition television.

Shear Burr: A condition caused by a worn or out of adjustment shear knife. It is indicated by a small raised area at the end of the strip.

Shear Carriage: Bottom section of the shear that raises when a cut is made and catches the pieces of scrap. Located at the welder.

Shear Crack: A diagonal, transgranular crack caused by shear stresses.

Shear Modulus (G): In a torsion test, the ratio of the unit shear stress to the displacement caused by it per unit length in the elastic range. Units are Pa or psi.

Shear Steel: Steel produced by forge welding together several bars of blister steel, providing a more homogeneous product.

Shear Strain: Elastic displacement produced by pure shear loading.

Shear Strength: The stress required to produce fracture in the plane of cross section, the conditions of loading being such that the directions of force and of resistance are parallel and opposite although their paths are offset a specified minimum amount.

Shear Stress: Load per unit area parallel to the plane of contact.

Shearing: A process of mechanically cutting metal bars to the proper stock length necessary for forging and trimming dies.

Shearing Test: The test applied to metal to determine the stress required to fracture it across its section.

sheath: The covering around the insulation of a cable.

Sheath: The material, usually an extruded plastic or elastomer, applied outermost to a wire or cable. Very often referred to as a jacket.

shed : shed a circular roof-like feature of an electrical insulator which presents a long electrical leakage path while permitting the drainage of rainwater.

Sheet: Wide, flat rolled steel. It is generally accepted that steel less than 3 mm thick is sheet and more than 3 mm (1/8 inch) thick is plate (See Plate).

sheet lightning: Lightning in diffused or sheet form due to reflection and diffusion by the clouds and sky. A single bolt within a cloud or between clouds can illuminate an entire cloud from the inside. This is called sheet lightning.

Sheet Mill: The facility which produces hot dipped galvanized products, including galvanized, galvanized and Galvan.

Sheet Mill Product: A product produced at the Sheet Mill.

Sheet Products: 1) Hot Roll (01) Uncoated, heavy gauge, fully processed in Strip Steel, never cold reduced at Tandem Mill. 2) Cold Roll (02) Uncoated, heavy gauge, primarily processed in Strip Steel, although some goes to the Tin Mill, always cold reduced at Tandem Mill. 3) Galvanized (05,06) Bath coated with zinc, heavy gauge, primarily processed thru Strip Steel & Sheet Mill, majority is cold reduced at Tandem Mill. 4) Weirzin (07) electrogalvanized Zinc coated, normally lighter gauge than galvanized, processed through Strip Steel & Tin Mill, mostly single reduced. (Tandem)

sheet resistance : sheet resistance lateral resistance of an area of thin film in the shape of a square.

Sheet Steel: Thin, flat rolled steel. Coiled sheet steel accounts for nearly one half of all steel shipped domestically and is created in a hot strip mill by rolling a cast slab flat while maintaining the side dimensions. The malleable steel lengthens to several hundred feet as it is squeezed by the rolling mill. The most common differences among steel bars, strip, plate, and sheet are merely their physical dimensions of width and gauge (thickness).

Shelf life of batteries: The length of time, under specified conditions, that a battery can be stored so that it keeps its guaranteed capacity.

Shell And Tube Heat Exchanger: Sheet having a uniform bright finish on one side and a mill finish on the other

Shell Molding: A process for forming a mold from resin bonded sand mixtures brought in contact with pre heated (300 500 B0F) metal patterns, resulting in a firm shell with a cavity corresponding to the outline of the pattern.

Shell storage capacity: The design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

shellac: A yellowish natural resin secreted by the lac insect which is parasitic on certain trees.

shell-type transformer : shell-type transformer a power trans-former in which the magnetic circuit surrounds and normally encloses a greater portion of the electrical winding.

Shelving: A coating defect consisting of an intercoat adhesion failure where a topcoat does not adhere to the coating below.

Sherardizing: A process developed in Britain in 1904 by Sherard Cowper Coles. It is a method of producing a protective zinc coating on iron and steel products.

Shewed Tolerances: Tolerances which are non symmetrically distributed about the design parameter.

Shf - super high frequency. : A range of frequencies extending from 3ghz to 30ghz. Shift.

SHFS: Polyvinyl-insulated with felted-asbestos, flame-proof cotton or rayon braid. Navy switch-board wire. 600V

Shield: Device surrounding that portion of a connector that is used for attaching wires or cables to shield against electromagnetic interference, and/or protect connector wires or cable from mechanical damage.

Shield: In cables, that metallic layer applied over the dielectric or group of dielectrics, composed of woven braided, or served wires, foil wrap or tubular metallic construction to prevent electrostatic or electromagnetic interference between the enclosed wires and external fields.

shield wire : shield wire (1) a ground wire placed above an electric transmission line to shield the conductors from lightning strokes. (2) a ground wire buried directly above a buried communications cable for lightning protection.

Shielded Arc Welding: Arc welding in which the arc and the weld metal are protected by a gaseous atmosphere, the products of decomposition of the electrode covering, or a blanket of fusible flux.

Shielded Cable: Usually concerning a high voltage power cable 5000V and above enclosed in a non-magnetic conducting envelope, so constructed that substantially every point on the insulation is at ground potential or some pre-determined potential with respect to the ground. Can apply to multiple conductor cable in which each single conductor is shielded or to a multiple conductor cable where the overall assembly is shielded.

shielding: protective coating that helps eliminate electromagnetic and radio frequency interference.

shielding: The process of shielding pieces of apparatus from the effect of electrostatic fields which are external to the apparatus itself.

shielding effectiveness : shielding effectiveness a measure of the reduction or attenuation in the electromagnetic field strength at a point in space caused by the insertion of a shield between the source and that point. Typically expressed in decibels: $SE = 20 \log_{10} \frac{E_1}{E_2}$ dB, where E_1 = field strength measured without shield and E_2 = field strength measured after shielding is applied.

Shift: A casting defect caused by mismatch of cope and drag or of cores and mold.

shift instruction : shift instruction a program instruction in which data in a register or memory location is shifted one or more bits to the left or right. Data shifted off the end of the register or memory location is either shifted into a flag register, used to

set a condition flag, or dropped, depending on implementation of the instruction. See also rotate instruction.

shift invariance : shift invariance a characteristic of a property that in some domain it is invariant to displacements within that domain. Particularly important sorts of shift invariance are space invariance and time invariance. The impulse response of a system is independent of the spatial (or temporal) location of the impulse.

shift register: A digital circuit capable of storing and shifting binary data.

shift register : shift register a register whose contents can be shifted to the left or right.

Shim: A thin flat hard metal strip produced to close tolerances; used primarily for tool, die and machine alignment purposes. In steel there are four general types: (1) Low Carbon Rockwell B 80/100; (2) Hard Rolled High Carbon Rockwell C 28/33. (3) Hardened and Tempered Spring Steel Rockwell C 44/51; (4) Austenitic Stainless Steel Rockwell C 35/45. Brass shim of commercial quality is also used and most generally specified is 2 Nos. Hard but may be 4 Nos. Hard.

Shipout: A coil which has been fully processed to customer specification

shock current : A current passing through the body of a person or livestock such as to cause electric shock and having characteristics likely to cause dangerous effects.

Shock Hazard: A dangerous electrical condition associated with the possible release of energy caused by contact or approach to energized parts.

Shoe: A holder used as a support for the stationary portions of forging and trimming.

Shoran . : A precise short-range electronic navigation system which uses the time of travel of pulse-type transmission from two or more fixed stations to measure slant-range distance from the stations. Also, in conjunction with a suitable computer used in precision bombing (this term is derived from the words short range radio navigation systems).

Shore Hardness Test: Same as scleroscope test.

Shore Scleroscope: An instrument that measures the hardness of a sample in arbitrary terms of elasticity. A diamond tipped hammer is allowed to fall freely down a graduated glass tube on to the sample under test. The hardness is measured by the height of the rebound. In another for the rebounding hammer actuates the pointer of a scale so that the height of the rebound is recorded.

Short: Brittle.

Short Belt: The belt that delivers coal from the seventh floor hopper to the long belt.

Short circuit: An undesirable low resistance path between two points in a circuit.

Short circuit: An electric current taking a shorter or different path than intended.

Short Circuit: 1. A load that occurs when an ungrounded conductor comes into contact with another conductor or grounded object. 2. An abnormal connection of relatively low impedance, whether made intentionally or by accident, between two points of different potential.

short circuit: A circuit element which has an impedance approaching zero.

Short Circuit: Loads which occur during fault conditions and are characterized by very heavy current flow.

Short Circuit: Can be classified as an overcurrent which exceeds the normal full load current of a circuit. Also characteristic of this type of overcurrent is that it does not leave the normal current carrying path of the circuit-that is, it flows from the source through the conductors, through the load, back through the conductors, to the source again.

Short circuit : A short circuit is an electrical circuit that allows the current to pass through intended path.

short circuit : short circuit a condition on the power system where energized conductors come in contact (or generate an arc by coming in close proximity) with each other or with ground, allowing (typically large) fault currents to flow.

short circuit admittance : short circuit admittance the admittance into an N-port device when the remaining ports are terminated in short circuits. For port 1 of a 2-port device, it is the input admittance into port 1 when port 2 is shorted.

Short circuit current: The current flowing freely through an external circuit that has no load or resistance; the maximum current possible.

short circuit current : An overcurrent resulting from a fault of negligible impedance between live conductors having a difference in potential under normal operating conditions.

short circuit gain-bandwidth product : short circuit gain-bandwidth product a measure of the frequency response capability of an electronic circuit. When applied to bipolar circuits, it is nominally the signal frequency at which the magnitude of the current gain degrades to one.

Short Circuit Protection: Internal circuitry which protects the photoelectric sensor in the event that the load becomes shorted.

Short Circuit Rating: The maximum short circuit current of an electrical component can sustain without the occurrence of excessive damage when protected with an overcurrent protective device.

short code : short code in a spread-spectrum system, periodic spreading code (spreading sequence) with a period equal to a bit duration. See also long code.

Short Distribution (Lighting): A luminaire is classified as having a short light distribution when its max candlepower point falls between 1.0MH2.25MH TRL. The maximum luminaire spacing to mounting height ratio is generally 4.5 or less.

Short purchases: A single shipment of fuel or volumes of fuel purchased for delivery within 1 year. Spot purchases are often made by a user to fulfill a certain portion of energy requirements, to meet unanticipated energy needs, or to take advantage of low-fuel prices.

Short term sales: Any short-term purchase covering a time period of 2 years or less. Purchases from intrastate pipelines pursuant to Section 311(b) of the NGPA of 1978 are classified as short-term sales, regardless of the stated contract term.

Short Terne: A term applying to terne coated (Lead and Tin) sheets with reference to Base Box sizes (14 x 20) Refer to terne plate.

Short ton (st): A unit of weight equal to 2,000 pounds.

Short Transverse Direction: For plate, sheet and forging, the direction through the thickness perpendicular to both longitudinal and long transverse directions.

Short-circuit current (Isc): The current flowing freely from a photovoltaic cell through an external circuit that has no load or resistance; the maximum current possible.

short-circuit protection : short-circuit protection the beneficial effect provided by an overcurrent device when it acts to interrupt short-circuit current.

short-circuit test : short-circuit test a transformer test conducted by placing a few percent of rated voltage on the voltage side while the low voltage winding is shorted. By measuring the voltage, current, and input power, it is possible to calculate the equivalent winding impedance for the transformer equivalent circuit.

shortened code : shortened code a code constructed from another code by deleting one or more message symbols in each message. Thus an .n; k/ original code becomes an .n-1; k-1/ code after the deleting of one message symbol.

short-haul modem. : See line driver and local dataset.

Shortness: A form of brittleness in metal. It is designated as cold, hot, and red, to indicate the temperature range in which the brittleness occurs.

Shortness (Hot): Brittleness in a metal at an elevated temperature.

Short-term debt or borrowings: Debt securities or borrowings having a maturity of less than one year.

Short-term purchase: A purchase contract under which all deliveries of materials are scheduled to be completed by the end of the first calendar year following the contract-signing year. Deliveries can be made during the contract year, but deliveries are not scheduled to occur beyond the first calendar year thereafter.

Short-Time Rating: The maximum constant load that can be carried for a specified time without exceeding established temperature rise limitations under prescribed conditions.

shortwall mining: system generally refers to the room-and-pillar mining in which the working face is wider than usual but smaller (less than 150 feet) than that in longwall mining. Roof support and mine ventilation are paramount in all underground mining operations. Roof bolting is the principal method of supporting the mine roof. In roof bolting, long bolts, 2 to 10 feet long with an expansion shell or with resin grouting are placed in the mine roof. The bolts reinforce the roof by pulling together rock strata to make a strong beam or by fastening weak strata to strong strata. Mine ventilation, accomplished with fans, is essential to supply fresh air and to remove gases and dust from the mine. To reduce the possibility of coal dust explosions, rock dust is sprayed in an underground coal mine. Rock dust is a very fine noncombustible material (pulverized limestone).

Shortwall mining: A form of underground mining that involves the use of a continuous mining machine and movable roof supports to shear coal panels 150 to 200 feet wide and more than half a mile long. Although similar to longwall mining, shortwall mining is generally more flexible because of the smaller working area. Productivity is lower than with longwall mining because the coal is hauled to the mine face by shuttle cars as opposed to conveyors.

Shortwall mining machine: generally is a continuous-mining machine used with a powered, self-advancing roof support system. It shears coal from a short coal face (up to about 150 feet long). The broken coal is hauled by shuttle cars to a conveyor belt.

Shot Blast: Shot blasting consists of attacking the surface of a material with one of many types of shots. Normally this is done to remove something on the surface such as scale, but it is also done sometimes to impart a particular surface to the object being shot blasted, such as the rolls used to make a 2D finish. The shot can be sand, small steel balls of various diameters, granules of silicon carbide, etc. The device that throws the shot is either a large air gun or spinning paddles which hurl the shot off their blades.

Shot Blast Hoses: Shot Blast Hoses are used to deliver a high-pressure abrasive material, such as sand or shot, for the purposes of cleaning, smoothing, or etching a surface. Shot blast hoses are typically made from reinforced natural rubber (NR) to deliver maximum tensile strength, optimal flexibility, and a wide operating temperature range. The inner layer of the hose is an abrasive resistant liner necessary to ensure both high performance and long life of the blasting system. Material, such as sand or shot, for the purposes of cleaning, smoothing, or etching a surface. Shot blast hoses are typically made from reinforced natural rubber (NR) to deliver maximum tensile strength, optimal flexibility, and a wide operating temperature range. The inner layer of the hose is an abrasive resistant liner necessary to ensure both high performance and long life of the blasting system.

Shot Blast Roll Finish: The surface finish (with a grit microfinish) on the rolls in the last stand of tandem mill or temper mill; determines the surface finish of the product where a grit finish produced to a specified micro inch reading is desired.

Shot Blasting: A process of cleaning forgings by propelling metal shot at high velocity by air pressure or centrifugal force at the surface of the forgings. See also Blast Cleaning.

shot noise : shot noise voltage developed at internal device boundaries, such as solid-state junctions, where charges cross from one type of material into another. Also known as Schottky noise.

Shotblasting (Shot Peening): Casting cleaning process employing a metal abrasive (grit or shot) propelled by centrifugal or air force.

shotgun : shotgun a specialized hot stick that is used to install a hot tap.

Shotgun Stick: A specialized hot stick that allows the capture of certain types of clamps and devices in its hook. It is also

called a "Grip All" stick.

Shredded Scrap: Fist sized, homogenous pieces of old automobile hulks. After cars are sent through a shredder, the recyclable steel is separated by magnets. Mini mills consume shredded scrap in their electric arc furnace operations.

Shrink: The difference in volume between liquid metal and solid metal or the void (shrink hole) left in a casting because of it.

Shrink Hole: A hole or cavity in a casting resulting from shrinkage and insufficient feed metal, and formed during solidification.

Shrinkage: The volume of natural gas that is transformed into liquid products during processing, primarily at natural gas liquids processing plants.

Shrinkage Cavity: A void left in cast metals as a result of solidification shrinkage and the progressive freezing of metal towards the center.

Shrinkage Cracks: Cracks that form in metal as result of the pulling apart of grains by contraction before complete solidification.

Shubnikov–de Haas oscillation : Shubnikov–de Haas oscillation quantum oscillations in resistance as a function of applied magnetic field.

shunt: A component connected in parallel. A current shunt is a device for altering the amount of electric current flowing through a piece of apparatus, such as a galvanometer.

Shunt: A device used to divert part of an electric current.

shunt : shunt (1) a device having appreciable impedance connected in parallel across other devices or apparatus and diverting some of the current from it. Appreciable voltage exists across the shunted device or apparatus, and an appreciable current may exist in it.(2) an inductive element connected across a power line or bus. Those connected to buses are known as bus-connected reactors, while those connected across a power line are called line-connected reactors.

shunt capacitor : shunt capacitor a capacitor or group of capacitors which are placed across an electric power line to provide a voltage increase or to improve the power factor of the circuit. A switchable shunt may be disconnected from the circuit when conditions warrant, while a fixed shunt is permanently connected to the power line.

shunt DC machine : shunt DC machine a DC machine with the field winding connected in shunt with the armature. In shunt generators, residual magnetism must be present in the machine iron in order to initiate the generation process. These machines are also known as self-excited, since they supply their own excitation.

shunt field : shunt field a field winding of a DC machine consisting of many turns of fine wire, connected in parallel with the armature circuit. It may be connected to the same source as the armature or a separate source.

shunt motor: d.c. motor with a shunt connected field.

shunt peaking : shunt peaking use of a peaking coil in a parallel tuned circuit branch connecting the output load of one amplifier stage to the input load of the following stage, in order to compensate for high frequency loss due to the distributed capacitance of the two stages.

shunt reactor : shunt reactor a reactor intended for connection in shunt to an electric system to draw inductive current.

Shunt Reactors: These are used in an extra high-voltage substation to neutralize inductive reactance in long EHV transmission lines.

Shunt regulator: Type of a battery charge regulator where the charging current is controlled by a switch connected in parallel with the Photovoltaic generator. Overcharging of the battery is prevented by shorting the Photovoltaic generator.

Shut in: Closed temporarily; wells and mines capable of production may be shut in for repair, cleaning, inaccessibility to a market, etc.

Shut Off Valve: Any valve used to isolate pressure in a system.

Shutdown: When production is stopped for repairs, or scheduled down turns.

Shutdown date: Month and year of shutdown for fuel discharge and refueling. The date should be the point at which the reactor became subcritical.

Shut-in royalty: A royalty paid by a lessee as compensation for a lessor's loss of income because the lessee has deferred production from a property that is known to be capable of producing minerals. Shut in may be caused by a lack of a ready market, by a lack of transportation facilities, or by other reasons. A shut-in royalty may or may not be recoverable out of future production.

Shuttle car: is a rubber-tired haulage vehicle that is unloaded by a built-in conveyor.

Shuttle Valve: A valve that has three ports and a common ball or spool check valve. When flow is applied at either of the two inlet ports, the third or output port receives flow from the higher pressure inlet port.

SI: International System of Units (Système international d'unités)

SI: See "International System of Units".

Si : Si periodic table symbol for silicon. See silicon.

SI units: The International System of Units.

Si/SiGe/SiGeC : Si/SiGe/SiGeC silicon-based alloy system providing band offsets that enable heterostructures that can be utilized for hetero-junction transistor design and quantum confinement.

SIC: See Standard Industrial Classification

SIC: Specific inductive capacity. Same as dielectric constant.

Sic, subject indicator code. : A trigraph of letters and/or letters and figures, comprising of subject area, subject sphere and

subject code, aiding communication staffs in the distribution of messages without having to refer to the text. Sics are published in the acp 117 nato supp-2.

Side Arm Filter: See Polishing Filters.

side band: The band of frequencies lying on either side of a modulated carrier wave.

Side lobe jamming. : Jamming through a side lobe of a receiving antenna in an attempt to obliterate the desired signal received through the main lobe of the receiving antenna or to confuse the operator as to the true azimuth of the jammer by the injection of multiple strobes.

side lobe level : side lobe level the ratio of a local maximum in a radiation pattern to the global maximum (main beam) of the radiation pattern.

Side Set: A difference in thickness between the two edges of plate, sheet or foil.

Side Trim: A process whereby a Tin Mill Product edge is trimmed to produce a relatively smooth finished edge.

sideband : sideband the signal produced when a carrier signal is modulated. They may be one single sideband, one set of upper and lower sidebands, or a series of sidebands whose number is dependent on the modulation index of the modulation system being used.

Sideband.: A sideband is the frequency band, above or below the carrier, produced by the process of modulation.

sidelobe : sidelobe a lobe in an antenna radiation pattern apart from the main lobe and any grating lobes. Sidelobes have peak amplitudes less than that of the main lobe.

sidelobe level (SLL) : sidelobe level (SLL) the peak amplitude of a sidelobe relative to the peak amplitude of the main lobe. The SLL is usually expressed as the number of decibels below the main lobe peak.

Side-real period (side-real day). : The time duration of one orbit measured relative to the stars. For earth this equates to a time period of 23 hours, 56 minutes, 4.9054 seconds (one side-real day).

Sidetrack drilling: This is a remedial operation that results in the creation of a new section of well bore for the purpose of (1) detouring around junk, (2) re-drilling lost holes, or (3) straightening key seats and crooked holes. Directional "side-track" wells do not include footage in the common bore that is reported as footage for the original well.

Sidewalk (lighting): Paved or otherwise improved areas for pedestrian use, located within public street right-of-way also containing roadways for vehicular traffic.

Sidewall Pressure: The force exerted on a cable as it is dragged around a bend. The longer the pull and the tighter the bend radius, the higher the sidewall pressure will become. High sidewall pressure damages cable. There is a higher chance of destroying cable by high s

Siding: An exterior wall covering material made of wood, plastic (including vinyl), or metal. Siding is generally produced in the shape of boards and is applied to the outside of a building in overlapping rows.

Siemen (S): The unit of measurement for conductance. Named for Ernst Werner von Siemens, a German engineer who made notable improvements to telegraphic and electrical apparatus.

siemens (S): SI unit of electric conductance. One siemens is equal to the conductance between two points of a conductor having a resistance of 1 W. siemens is the reciprocal of the ohm.

Siemens process: A commercial method of making purified silicon.

Sievert (Sv): Unit indicating the biological damage caused by radiation. One Joule of beta or gamma radiation absorbed per kilogram of tissue has 1 Sv of biological effect; 1 J/kg of alpha radiation has 20 Sv effect and 1 J/kg of neutrons has 10 Sv effect.

SiGe : SiGe in order to increase the speed of Si semiconductor devices without compromising on Si's ease of device processing, SiGe heterostructures can be used.

Sight Block: A 2 x 2 steel block located on the inside of the #1 feeder housing used for lining up the front end of a coil with the pulling rolls before loading it into the feeder.

Sighting. : Actual visual contact. It does not include other contacts which must be reported by type e.g. Radar and sonar contacts.

sigma-delta A/D conversion : sigma-delta A/D conversion an over-sampling A/D conversion process where the analog signal is sampled at rates much higher (typically 64 times) than the sampling rates that would be required with a Nyquist converter. Sigma-delta modulators integrate the analog signal before performing the delta modulation. The integral of the analog signal is encoded rather than the change in the analog signal, as is the case for traditional delta modulation. A digital sample rate reduction filter (also called a digital decimation filter) is used to provide an output sampling rate at twice the Nyquist frequency of the signal. The overall result of oversampling and digital sample rate reduction is greater resolution and less distortion compared to a Nyquist converter process.

sigma-delta modulation : sigma-delta modulation a method for scalar quantization, similar in principle to delta modulation but somewhat more sophisticated. Employed in, e.g., compact-disk players.

sigmoidal characteristic : sigmoidal characteristic a widely used type of activation function, especially in networks trained using schemes like backpropagation that are based upon gradient descent. The most common functions used are the arc-tan, tanh, and logistic functions, with appropriate variations for binary and bipolar variables.

sign flag : sign flag a bit in the condition code register that indicates whether the numeric result of the execution of an instruction is positive or negative (1 for negative, 0 for positive).

signal: A visual, audible, electrical or other indication used to convey information.

Signal: An electric current used to convey information either digital, analog, audio, or video.

Signal (1). : As applied to electronics, any transmitted electrical impulse.

Signal (2). : Operationally, a type of message, the text of which consists of one or more letters, words, characters, signal flags, visual display or special sounds, with prearranged meanings and which is conveyed or transmitted by visual, acoustical, or electrical means.

Signal (3). : The document containing the information to be transmitted and or any reproduction thereof made in the course of transmission or delivery to the addressee. Also known as a message.

Signal analysis. : Study of complex electromagnetic radiation's to determine their technical characteristics and their tactical or strategic use. See analysis.

signal averaging : signal averaging an averaging process that is used to enhance signals and suppress noise, thereby improving the signal-to-noise ratio. See also averaging.

Signal characteristics. : See radiation characteristics.

Signal Conditioning: To process the form or mode of a signal so as to make it electrically compatible with a given device.

signal conditioning : signal conditioning a process that is used to improve the appearance or effectiveness of a signal, either by suppressing noise or by transforming the signal into a more suitable form. This latter category includes image enhancement. Signal conditioning is often appropriate in preparing signals for recognition.

signal constellation : signal constellation in digital communications, the set of transmitted symbols represented as points in Euclidean space. For example, the signal constellation for (uncoded) quadrature amplitude modulation is a set of points in the complex plane.

signal detection : signal detection detecting the presence of a signal in noise.

signal flow graph : signal flow graph graphical representation of the relationships between a set of independent input variables that are linearly related to a set of dependent output variables.

Signal generator: the electronic device which can generate the repeating or non repeating signals.

Signal letters. : See call sign, international.

signal level : signal level the value of a signal at a particular place and time.

Signal message address (sma). : A unique shortened form of address for use in the address component of a signal message. It identifies an authority and may contain a geographical location.

signal processing : signal processing a generic term that refers to any technique that manipulates the signal, including but not limited to signal averaging, signal conditioning and signal recognition. When applied to images, it is normally referred to as image processing, the term signal processing usually being reserved for 1-D signals.

signal recognition : signal recognition the recognition of signals by appropriate analysis, often with the help of filters such as matched filters or frequency domain filters.

signal recovery : signal recovery the process of extraction of signals from a background of noise or clutter, often in situations, where the signal-to-noise ratio is so low that matched filters, synchronous detectors or lock-in amplifiers have to be used. See also synchronous detection.

signal reference subsystem : signal reference subsystem this subsystem provides the reference points for all signal grounding to control static charges, noise, and interference. It may consist of any one or a combination of the lower frequency network, higher frequency network, or hybrid signal reference network.

signal restoration : signal restoration the restoring of data that has been corrupted by instrumentation dynamics and noise.

Signal security (sigsec). : A generic term which includes both communications security and electronic security.

signal subspace : signal subspace in an orthogonal decomposition of a space, the part to which the desired signal belongs. See also noise subspace.

signal transfer point (STP) : signal transfer point (STP) a packet switch found in the common-channel signaling network; it is used to route signaling messages between network access nodes such as switches and SCPs.

Signal, executive. : See executive signal.

signal, international code. : See code, international signal.

signaling : signaling procedures used to control (set up and clear down) calls and connections within a telecommunication network.

signaling system 7 (SS7): signaling system 7 (SS7) a communications protocol used in common-channel signaling networks.

Signalling. : In telephony, signalling refers to the process and the standards involved for passing control information between various terminal equipment on a network e.g. Between a pabx and a local exchange or between networked pabxs.

Signals intelligence (sigint):. The generic term used to describe comint and elint when there is no requirement to differentiate between these two types of intelligence, or to represent fusion of the two.

signal-to-interference ratio (SIR) : signal-to-interference ratio (SIR) the ratio of the average power of the signal component to the average power of the interference component in a case where an information-bearing signal of interest has been corrupted by interfering signals.

Signal-to-noise (S/N): It is the ratio of the signal power to noise power ratio.

signal-to-noise plus interference ratio (SNIR) : signal-to-noise plus interference ratio (SNIR) the ratio of total signal power to the sum of total noise power and total interference power at a receiver. The SNIR is a more complete indicator of

received signal quality than either SIR or SNR, where the relative contribution of receiver noise and external sources of interference are either unknown or widely varying. It is a unit-less quantity. See also signal-to-noise ratio, signal-to-interference ratio.

Signal-to-Noise Ratio (SNR): The ratio of the overall rms signal level to the rms noise level, expressed in db.

signal-to-noise ratio (SNR) : signal-to-noise ratio (SNR) the ratio of the average power of the information signal component to the average power of the noise component in a signal consisting of the sum of an information signal component and a corrupting noise component. It is a unitless quantity.

signal-to-noise ratio S/N ratio: The ratio of desired signal level to the undesired noise level, expressed in dB.

Signal-to-noise ratio. : The ratio, at a selected point in the circuit, of signal power to total circuit-noise power.

Signal-to-noise ratio. : The relative strength of the desired signal compared to the strength of unwanted noise; usually measured in db.

signature : signature a characteristic easily computed feature or function by which a particular object or signal may be at least tentatively identified. An example is the centroidal profile for an object having a well defined boundary.

signature analysis : signature analysis (1) a test where the responses of a device over time are compared to a characteristic value called a signature, which is then compared to a known good one.(2) an analysis of the signature to extract the desired (signal) information.

signed-digit representation : signed-digit representation a fixed-radix number system in which each digit has a sign (positive or negative). In a binary signed-digit representation, each digit can assume one of the values -1, 0 and 1.

significand : significand the mantissa portion of a floating-point number in the IEEE 754 floating-point standard. It consists of an implicit or explicit leading integer bit and a fraction.

sign-magnitude representation: sign-magnitude representation a number representation that uses the most significant bit of a register for the sign and the remaining bits for the magnitude of a binary number.

Sign-on character. : The first character sent on an abr circuit; used to determine the data rate.

Silencer: See MUFFLER.

Silent zone. : See skip zone.

Silica Brick: Refractory material of ganister, bonded with hydrated lime, and fired at high temperature.

Silica Gel: A colloidal form of silica used as a drying agent.

Silica Sand: Sand with a minimum silica content of 95% used for forming casting molds.

Silicon: Chemical symbol Si. Element No. 14 of the periodic system; atomic weight 28.06. Extremely common element, the major component of all rocks and sands; its chemical reactions, however, are those of a metalloid. Used in metallurgy as a deoxidizing scavenger. Silicon is present, to some extent, in all steels, and is deliberately added to the extent of approximately 4% for electric sheets, extensively used in alternating current magnetic circuits. Silicon cannot be electrodeposited.

Silicon: A semiconductor material made from silica, purified for photovoltaic applications.

Silicon: A chemical element (Si), atomic number 14, semimetallic in nature, dark gray, that is an excellent semiconducting material and is the most common semiconducting material used in making photovoltaic devices.

silicon : silicon most common element in the earth's crust and a type IV (from periodic table of elements) semiconductor material. The bipolar carriers, both holes (p dopants) or electrons (n dopants) are roughly in proportion to each other, resulting in nearly equal currents in the same direction. They move at about half the speed of comparable GaAs unipolar carriers. The thermal resistance is also about half that of GaAs. Silicon has an indirect band gap of 1.11 eV, density-of-states masses of 1.1 times the free-electron mass for the conduction band and 0.56 for the valence band.

Silicon (Si): A chemical element, atomic number 14, semi-metallic in nature, dark gray, an excellent semiconductor material. A common constituent of sand and quartz (as the oxide). Crystallizes in face-centered cubic lattice like a diamond. The most common semiconductor material used in making photovoltaic devices.

silicon compiler : silicon compiler a set of software programs intended to start with design equations and output the corresponding GDS2 data. Silicon compilers are currently used to translate a standard cell design from one set of design rules to another or to create a new set of standard cells.

silicon controlled rectifier (SCR) : silicon controlled rectifier (SCR) a current controlled four-layer (pnpn) device for high power (3000 A) and low speed (500 Hz) applications. SCRs can only be on or off, with no intermediate operating states like transistors. The SCR acts as a switch that is turned on by a short current pulse to the gate, provided that the device is in its forward blocking state. Once latched on, the gate current can be removed and the device will remain on until the anode current goes negative, or the current through the SCR becomes less than its designated holding current. A disadvantage is that a commutation circuit is often needed for forced turn-off (forced commutation).

silicon controlled rectifier or SCR : A thyristor.

Silicon Electrical Steel: A type of specialty steel created by introducing silicon during the steelmaking process. Electrical steel exhibits certain magnetic properties, which make it optimum for use in transformers, power generators and electric motors. **GRAIN ORIENTED** The metal's grain runs parallel within the steel, permitting easy magnetization along the length of the steel. Although grain oriented steel may be twice as expensive to produce, its magnetic directional characteristics enable power transformers, made from this metal, to absorb less energy during operation. **NON GRAIN ORIENTED** Because there is no preferential direction for magnetization, non grain oriented steel is best used in rotating apparatus such as electric motors.

Silicon Steel: Steel usually made in the basic open hearth or electric furnace, with about 0.50 5% silicon, other elements

being usually kept as low as possible. Because of high electrical resistance and low hysteresis loss, silicon sheet and strip are standard in electric magnet manufacture.

Silicon-controlled rectifier (SCR): See thyristor

Silicon-controlled rectifier (SCR) : Silicon-controlled rectifier (or semiconductor-controlled rectifier) or thyristor is a four-layer solid-state current controlling device.

Siliconizing: Diffusing silicon into solid metal, usually steel, at an elevated temperature.

Silky Fracture: A steel fracture that has a very smooth fine grain or silky appearance.

Silt: Waste from Pennsylvania anthracite preparation plants, consisting of coarse rock fragments containing as much as 30 percent small-sized coal; sometimes defined as including very fine coal particles called silt. Its heat value ranges from 8 to 17 million Btu per short ton. Synonymous with .

Silt, culm, refuse bank, or slurry dam mining: A mining operation producing coal from these sources of coal.

Silver Solders: Alloys of silver, copper, zinc and other metals, melting between 650 and 875 (degrees) C. used for making strong yet moderately ductile joints that resist corrosion.

simple medium : simple medium a medium that is linear, isotropic, homogeneous, and time-invariant.

simplex : simplex term used to describe a method of winding the armature of a commutated electric machine in which consecutive coils are placed in adjacent coil slots around the periphery of the rotor. In a lap winding, this produces two parallel electrical paths between brushes for each pole pair. In a wave winding, a simplex arrangement produces two parallel electrical paths between brushes regardless of the number of poles. See also duplex, multiplex.

Simplex Communications System: A communications system in which data can only travel in one direction.

Simplex operation. : Simplex operation refers to communication between two points in both directions, but not simultaneously.

Simplex transmission. : Transmission in only one direction.

simulated annealing : simulated annealing an optimization technique that seeks to avoid local minima by allowing the search trajectory to follow paths that not only decrease the objective function but also sometimes increase it. The probability that an increase in the objective function is allowed by the technique is governed by a quantity that is analogous to temperature. The scheme commences with a high temperature, under which the probability of allowing increases in the objective function is high, and the temperature is gradually reduced to zero, and from then on no further increases in the function are allowed. See also annealing.

Simulation. : The creation of electromagnetic emissions to represent friendly notional or actual capabilities to mislead hostile forces.

simulator : simulator a program used to predict the behavior of a circuit. Simulators may be transistor level, gate level, behavioral level, analog, digital, unit delay, timing, or various combinations.

simulcast systems : simulcast systems systems that simultaneously broadcast over two or more different frequency channels or modes of broadcast signals.

simultaneous contrast : simultaneous contrast the phenomenon in which the brightness (perceived luminance) of a region on a dark background is greater than the brightness of an identical region on a light background. Illustrates that brightness (perceived luminance) is different from lightness (actual luminance). See also brightness, brightness constancy, human visual system, Mach band.

Simultaneous Engineering: Refers to the process where user/designer and producer interact to reduce lead time and improve the efficiency of a part. This process is faster and more efficient than the traditional sequential process of design and manufacture.

Simultaneous Sampling (SS): System in which each input or output channel is digitized or updated at the same time.

simultaneously accessible parts: Conductors or conductive parts which can be touched simultaneously by a person or, in locations specifically intended for them, by livestock. Simultaneously accessible parts may be live parts, exposed conductive parts, extraneous conductive parts, protective conductors or earth electrodes.

sine transform : sine transform usually refers to the discrete sine transform. It also refers to a continuous time transform similar to the Fourier transform.

Sine Wave: The sine wave sinusoid is a mathematical curve that describes a smooth repetitive oscillation of function sine.

Sine wave: A waveform whose instantaneous amplitude is a function of the sine of the angle of rotation for that instant. The output waveform produced by rotating a loop in a magnetic field, and the output of an oscillator generating a pure frequency.

sine wave: A fundamental waveform produced by periodic oscillation that expresses the sine or cosine of a linear function of time or space, or both.

sine wave: A sinusoidal periodic oscillation. The fundamental waveform from which other waveforms may be generated by combinations of various group of harmonics. The voltage and current waveforms produced from the power company generators (alternators) are basic sine waves.

Sine wave inverter: An inverter that produces utility-quality, sine wave power forms.

sine-squared pulse : sine-squared pulse pulse string made from a standard sinewave with an added DC component equal to one-half of the peak-to-peak value of the sine wave. The pulse string is, therefore, always positive in value.

sinewave brushless DC : sinewave brushless DC a permanent magnet brushless motor with sinusoidally distributed stator phase windings. More commonly known as permanent magnet synchronous machine.

Single Action Press: A forming press that operates with a single function, such as moving a punch into a die with no

simultaneous action for holding down the blank or ejecting the formed work.

Single crystal silicon: An extremely pure form of crystalline silicon produced by dipping a single crystal seed into a pool of molten silicon under high vacuum conditions and slowly withdrawing a solidifying single crystal boule (rod) of silicon. The boule is sawed into thin silicon wafers and fabricated into single-crystal photovoltaic cells.

Single crystal silicon (Czochralsky): Silicon cells with a well-ordered crystalline structure consisting of one crystal (usually obtained by means of the Czochralsky growth technique and involving in-got slicing), composing a module. Ribbon silicon is excluded.

single dwell detector : single dwell detector a detector in a communications receiver based on a decision on a transmitted symbol being made after a single correlation of the received signal with a reference signal. Compare with multiple dwell detector.

single electron transistor : single electron transistor solid state device that performs electronic functions using a single transistor's electron.

Single Element Transducer: A transducer having one measuring element.

single in-line memory module (SIMM) : single in-line memory module (SIMM) a miniature circuit board that contains memory

single in-line packaging (SIP) : single in-line packaging (SIP) a method of packaging memory and logic devices on small PCBAs with a single row of pins for connection.

single layer perceptron : single layer perceptron an artificial neural network consisting of a single layer of neurons (perceptrons) with an input layer. See also multilayer perceptron, perceptron.

single line to ground fault : single line to ground fault a fault on a three phase power line in which one conductor has become connected to ground.

single machine infinite bus system : single machine infinite bus system a model of a power system consisting of a single generator working into an infinite bus which represents the remainder of the system.

single mode : single mode single frequency resonance of a cavity that is usually associated with a unique field distribution.

Single Mode Fiber: An optical fiber which allows only one mode to propagate and which is generally used for long distance telephone transmission.

Single Phase: Single Phase electric power refers to the distribution of electric power using a system in which the voltage is taken from one Phase of a three Phase source. Single Phase distribution is used when loads are mostly lighting and heating, with few large elements

single phase: A circuit having two conductors, one of which is the live conductor and the other the neutral conductor.

single phase line : Carries electrical loads capable of serving the needs of residential consumers, small commercial consumers, and streetlights. It carries a relatively light load as compared to heavy duty three phase constructions.

single phase to ground fault : single phase to ground fault See single line to ground fault.

Single Phasing: That condition which occurs when one phase of a three phase system opens, either in a low voltage (secondary) or high voltage (primary) distribution system. Primary or secondary single phasing can be caused by any number of events. This condition results in unbalanced currents in polyphase motors and unless protective measures are taken, causes overheating and failure.

single photon emission computed tomography (SPECT) : single photon emission computed tomography (SPECT) a form of tomographic medical imaging based upon the density of gamma ray-emitting radionuclides in the body.

Single Pole Double Throw Switch (SPDT): Single Pole Double Throw (SPDT) switch is a switch that only has a single input and can connect to and switch between 2 outputs.

Single Pole Switch: Single-pole switch is used to control lights or fan etc. from only one location.

Single Pole Switch: (single-pole single-throw) A switch that makes or breaks the connection of one conductor and controls one load from one location.

single precision : single precision floating point numbers that are stored with fewer rather than more bits. Often refers to numbers stored in 32 bits rather than 64 bits.

Single purpose project: A hydroelectric project constructed only to generate electricity.

Single Receptacle: A receptacle that accepts only one plug.

Single Reduced: Refers to temper rolling in the tin mill. No gauge reduction occurs here. Steel sheet that is rolled in multiple strand reduction mills while cold, then annealed and temper rolled to produce thin gauges for can making. Besides reducing gauge and permitting fabrication of lighter weight cans, cold rolling also improves the steel's surface and metallurgical properties.

single scattering : single scattering weak interaction of the light wave with the medium. This occurs when this is weakly inhomogeneous. This process yields low changes in the phase and amplitude of light, and no variation in its state of polarization.

Single sideband (ssb) transmission. : That system of carrier transmission in which one sideband is transmitted and the other sideband is suppressed. The carrier wave may be either transmitted or suppressed.

single sideband modulation (SSB) : single sideband modulation (SSB) a method of amplitude modulation in which only one of the sidebands (upper or lower) is transmitted. This method can potentially double the capacity of a single channel.

single sweep: The ability of an oscilloscope to display just one window of time, thus preventing unwanted multiple displays. Necessary in the display of transient waveforms.

Single Tool Post : A test of galvanized (or any other metallic) coating weights administered by sampling the coated steel across the width at two inches from each edge and dead center. See Triple Spot Test.

Single Weave: A wire mesh grip woven with single strands of wire material

single-chip microprocessor : single-chip microprocessor a microprocessor that has additional circuitry in it that allows it to be used without additional support chips.

Single-circuit line: A transmission line with one electric circuit. For three-phase supply, a single circuit requires at least three conductors, one per phase.

Single-crystal material: A material that is composed of a single crystal or a few large crystals.

single-electron tunneling : single-electron tunneling the name given to very small capacitors with thin insulators so that tunneling can occur through this insulator. When the capacitor is small, it is possible that the energy change for the tunneling of one electron is larger than the thermal energy, so that fluctuations cannot support the tunneling. In this case, an external source must provide the energy needed for the tunneling process, which occurs usually (in these very small capacitors of order $< 10\text{--}18\text{ F}$) by the transfer of a single charge from one plate to the other.

single-element fuse : single-element fuse a fuse that is constructed with a single fusible element. It does not meet the standard definition of time-delay.

single-ended amplifier : single-ended amplifier an amplifier that has only one signal path and only one set of input and output ports.

Single-family housing unit: See housing structure/housing unit, specifically under Residential Sector heading.

single-input–single-output (SISO) system : single-input–single-output (SISO) system a system that transforms one input signal to one output signal. Also known as sin-

single-instruction stream, multiple-data stream (SIMD) : single-instruction stream, multiple-data stream (SIMD) a parallel computer architecture in which a collection of data is processed simultaneously under one instruction. Example in optics is imaging by a lens.

single-instruction stream, single data stream (SISD) : single-instruction stream, single data stream (SISD) a processor architecture performing one instruction at a time on a single set of data. Same as uniprocessor.

single-layer network : single-layer network a feedforward network consisting of input units connected directly to the output units. Thus, the network has a single layer of weights and no hidden units.

single-mode fiber : single-mode fiber an optical fiber with a relatively small diameter in which only one mode may propagate. However, this mode may have two orthogonal states of polarization that propagate unless a polarization maintaining optical fiber is used.

single-mode optical fiber : single-mode optical fiber relatively thin fiber that has low loss for one mode and much higher losses for all other modes. See also Flynn's taxonomy.

Single-Phase: This implies a power supply or a load that uses only two wires for power. Some "grounded" single phase devices also have a third wire used only for a safety ground, but not connected to the electrical supply or load in any other way except for safety ground.

Single-phase circuit: An AC circuit consisting of two or three intentionally interrelated conductors.

single-phase inverter : single-phase inverter an inverter with a single-phase AC voltage output. Half-bridge and full-bridge configurations are commonly used.

single-phasing : single-phasing a condition that occurs when a three-phase motor has an open circuit occur in one of the three lines. The motor continues to operate with one line to line voltage as a single-phase motor, with an increase in noise, vibration, and current. Proper over-load protection should detect the higher current and shut down the motor after some time delay.

single-point ground: The practice of tying the power neutral ground and safety ground together at the same point, thus avoiding a differential ground potential between points in a system.

single-pole double-throw (SPDT) : single-pole double-throw (SPDT) a switch that has a common port and two output ports. Among these two ports, only one selected port can be connected to the common port.

single-pole reclosing: single-pole reclosing the practice of clearing a fault which appears on one phase of a three-phase electric power line by disconnecting and reclosing only that phase as opposed to opening and reclosing all three phase conductors.

single-pole single-throw (SPST) : single-pole single-throw (SPST) a switch that has a pair of input–output ports. By changing its status, the switch works as short or open circuit.

Single-Shot Reclosing: An autoreclose sequence that provides only one reclosing operation, lockout of the CB occurring if it subsequently trips.

single-sided assembly : single-sided assembly a packaging and interconnecting structure with components mounted only on the primary side.

single-stage decision making : single-stage decision making decision making involving future operation of the system, as in the case of open-loop feedback control, where no future measurements and decision interventions are assumed when considering the decision taken at a given time.

single-step : single-step to operate a processor in such a way that only a single instruction or machine memory access cycle is performed at a time, enabling the user to examine the status of processor registers and the flags. A common debugging method for small machines.

single-tuned circuit : single-tuned circuit a circuit which is tuned by varying only one of its components, e.g., an IF transformer in which only the secondary coil (rather than both primary and secondary) is tuned.

single-valued : single-valued a function of a single variable, x, t , which has one and only one value $y = f(x, t)$ for any t . The square root is an example of a function that is not single-valued.

singularity : singularity a location in the workspace of the manipulator at which the robot loses one or more DOF in Cartesian space, i.e., there is some direction (or directions) in Cartesian space along which it is impossible to move the robot end effector no matter which robot joints are moved.

Sinker Steel: Used for making sinkers in hosiery making machinery. Supplied both hardened and tempered and cold rolled and annealed. Usually extra precision rolled and extra flat. Carbon content about 1.25

Sinkhead Or Hot Top: A reservoir insulated to retain heat and to hold excess molten metal on top of an ingot mold, in order to feed the shrinkage of the ingot. Also called shrink head or feeder head.

Sinter: Baked particles that stick together in roughly one inch chunks, normally used for iron ore dust collected from the blast furnaces.

Sinter: A chemical sedimentary rock deposited by precipitation from mineral waters, especially siliceous sinter and calcareous sinter.

Sinter: To thermally cure or treat a material.

Sintered Carbide: Composite, containing carbides of extremely refractory metals, such as tungsten, tantalum, titanium, etc., cemented together by a relatively low melting metal, such as cobalt acting as a matrix.

sintered magnet : sintered magnet magnet made from powdered materials that are pressed together and then heated in an oven to produce desired shapes and magnetic properties.

Sintered Plate (Battery): The plate of an alkaline cell, the support of which is made of sintered metal powder, and into which the active material is introduced.

Sintering: A process that combines iron bearing particles, once recovered from environmental control filters, into small pellets. Previously, these materials were too fine to withstand the air currents of the smelting process and were thrown away. The iron is now conserved because the chunks can be charged into the blast furnace (see Agglomerating Processes).

Sintering Point: That temperature at which the molding material begins to adhere to the casting, or in a test when the sand coheres to a platinum ribbon under controlled conditions. Also, the temperature at which sand grains begin to adhere to one another

sinusoid: A signal which is having a sinusoidal waveform.

sinusoid : sinusoid a periodic signal $x(t) = C \cos(\omega t + \phi)$ where $\omega = 2\pi f$ with frequency in hertz.

sinusoidal amplitude modulation : sinusoidal amplitude modulation amplitude modulation where the carrier signal is a sinusoid. See amplitude modulation, carrier signal.

sinusoidal coding : sinusoidal coding parametric speech coding method based on a speech model where the signal is composed of sinusoidal components having time-varying amplitudes, frequencies and phases. Sinusoidal coding is mostly used in low bit rate speech coding.

Siphon Line: A line that directs steam flow past an orifice to create a suction on the intake line of a pump to get a prime.

SIS: Indicates single conductor having synthetic thermosetting insulation of heat-resistant, moisture-resistant, flame-retardant grade. Also made with chemically cross linked polyethylene insulation. Used for switchboard wiring only 90°C.

Site characterization: An onsite investigation at a known or suspected contaminated waste or release site to determine the extent and type(s) of contamination.

site diversity : site diversity the combination of received signals at widely separated locations having substantially different propagation paths to the transmitter. The resultant signal has reduced fading depth and therefore higher quality communication is possible. Often used in Earth-satellite link to overcome the effects of scintillation and rain fading.

Site energy: The Btu value of energy at the point it enters the home, sometimes referred to as "delivered" energy. The site value of energy is used for all fuels, including electricity.

Site energy consumption: The Btu value of energy at the point it enters the home, building, or establishment, sometimes referred to as "delivered" energy.

Site-specific information DSM program assistance: ADSM (demand-side management) assistance program that provides guidance on energy efficiency and load management options tailored to a particular customer's facility; it often involves an onsite inspection of the customer facility to identify cost-effective DSM actions that could be taken. They include audits, engineering design calculations on information provided about the building, and technical assistance to architects and engineers who design new facilities.

Six-Phase: A term characterizing the combination of six circuits energized by alternating e.m.f.'s which differ in phase by one-sixth of a cycle; i.e. 60 degrees.

Sizes : A slang term used when obtaining the order of coils to be processed. The size contains index, customer name, coil width, baseweight, and number of coils in the order.

Sizing: A slang term used when obtaining the order of coils to be processed. The size contains index, customer name, coil width, baseweight, and number of coils in the order.

SJ: Junior hard service, rubber-insulated pendant or portable cord. Same construction as type S, but 300V. Jacket thickness different.

SJO: Same as SJ, but neoprene, oil-resistant compound outer jacket. Can also be made "water-resistant." 300V, 60°C

SJOO: Same as SJO but with oil-resistant insulation as well as an oil-resistant jacket.

SJT: Junior hard service thermoplastic or rubber insulated conductors with overall thermoplastic jacket. 300V, 60°C to 105°C

SJTO: Same as SJT but oil-resistant thermoplastic outer jacket. 60°C

SJTOO: Same as SJTO but with oil-resistant insulation.

skeletonization : skeletonization a procedure, usually thinning, that produces an image skeleton.

Skelp: Steel that is the entry material to a pipe mill. It resembles hot rolled strip, but its properties allow for the severe forming and welding operations required for pipe production.

skew : skew (1) an arrangement of slots or conductors in squirrel cage rotors so that they are not parallel to the rotor axis.(2) in computer buses, a condition where values on certain bus lines have slightly different transmission times than values on other lines of the same bus. See also tape skew.

skewing : skewing (1) the bending of a curve away from its original shape.(2) In a differential amplifier, the offset between two signals.

Skid Marks: Visibly colder stripes on slabs caused by contact with water cooled skids in a pusher type reheat furnace.

Skilled person : A person with technical knowledge or sufficient experience to enable him/her to avoid dangers which electricity may create.

Skim Core (Skimmer): A flat core or tile placed in a mold to skim a flowing stream of metal. Commonly used in pouring basins, it holds back slag and dirt while clean metal passes underneath to the downsprue. See Core Strainer

Skim Gate: A gating arrangement which changes the direction of flow of molten metal and prevents the passage of slag and other undesirable materials into the mold cavity.

Skimming : Removing or holding back dirt or slag from the surface of the molten metal before or during pouring.

Skin: A thin surface layer that is different from the main mass of a metal object, in composition, structure or other characteristics.

Skin Drying : Drying the surface of the mold by direct application of heat.

Skin Effect: In an ac system, the tendency of the outer portion of a conductor to carry more of the current as the frequency of the ac increases.

skin effect: The tendency of current to stick to the outer layers of a conductor due to the presence of internal flux. The skin effect is more prominent at higher frequencies.

Skin Effect: In an alternating current system, a phenomenon that occurs at increased frequencies causing an increase in resistance of the conductor leaving the outer skin to carry most of the current. The phenomenon increases in intensity the higher the frequency.

skin effect : skin effect the tendency of an alternating current to concentrate in the areas of lowest impedance.

Skin paint. : A radar indication caused by the reflected radar signal from an object.

Skin Passed: Steel which has been processed through the Skin Mill (Temper Mill).

Skin Roll: Product to be sent to the Skin Mill for its next operation.

Skin tracking. : The tracking of an object by means of a skin paint.

skinny minnie : skinny minnie a telescoping fiberglass pole with interchangeable tools mounted at its end. It can be extended sufficiently to allow a line worker to service cut-outs and similar pole-top equipment from the ground.

Skip: An area of uncoated sheet which is frequently caused by equipment malfunction.

Skip distance. : For a specified operating frequency, the least distance in a given direction from the transmitter at which radio waves are received by reflection from the ionosphere. It is customary to ignore reflection from the sporadic E layer.

skip instruction : skip instruction an assembly language instruction that skips over the next instruction without executing it.

Skip zone. : The space or region wherein a transmission is not normally received between the farthest point reached by the ground wave and the nearest point at which the reflected waves come back to earth.

Skived Tape: Tape shaved in a thin layer from a cylindrical block of material.

Skull: A layer of solidified metal or dross on the wall of a pouring vessel often when metal has been poured.

sky wave : sky wave a wave that propagates into the ionosphere. It undergoes several reflections and refractions before it returns back to Earth.

sky wave. : That portion of a radiated wave that travels in space and is returned to earth by refraction in the ionosphere.

Sky Wire: See "Static Wire"

SL: Single-conductor paper-lead cables twisted together, without overall covering. (same as ML)

Sla: Stereolithography Apparatus

Slab Caster: A continuous caster used to form slabs.

Slab Core: Flat, plain core.

Slab Haulers: Huge hydraulic lift trucks that carry up to six slabs at a time. They move slabs between the caster, open hearth area, and the hot strip mill.

slab waveguide : slab waveguide a dielectric waveguide useful for theoretical studies and for approximating other types of waveguide such as the rib waveguide. See rib waveguide.

Slack: Excess strip in the line, without tension, used to allow movement of the strip.

Slack coal: usually refers to bituminous coal one-half inch or smaller in size.

Slack Quenching: The process of hardening steel by quenching from the austenitizing temperature at a rate slower than the critical cooling rate for the particular steel, resulting in incomplete hardening and the formation of one or more transformation products in addition to or instead of martensite.

Slag Inclusion: Nonmetallic solids entrapped in solid metal.

Slag Trap: An enlargement, dam, or extrusion in the gating or runners system in a mold for the purpose of preventing molten slag particles from entering the mold cavity.

slant angle : slant angle also called "dip angle"; the angle by which a plane slants or dips away from the frontal plane of the observer.

Slant Symbol: (/) As used in wiring device ratings, indicates that two or more voltage potentials can be used.

Slave station. : (in point-to-point circuits) the unit controlled by the master station.

Slave Valve: A spool type hydraulic valve that uses pressure from a pilot valve to move the position of its spool.

Sleet-Proof: Apparatus is designated as sleet-proof when so constructed or protected that the accumulation of sleet will not interfere with its successful operations.

Sleeve: See "Compression Splice".

sleeve : sleeve (1) rubber cover for a line worker's arms.(2) a type of wire connector.

Slew Rate : Slew rates defined as the maximum rate of change of output voltage per unit of time and is expressed as volt per second

slew rate : slew rate the rate of variation of an AC voltage in terms of volts per second. In an op-amp, if the signal at the op-amp output attempts to exceed this limit, the op-amp cannot follow and distortion ("slew rate limiting") will result.

slicer : slicer a device that estimates a transmitted symbol given an input that is corrupted by (residual) channel impairments.

For exam-ple, a binary slicer outputs 0 or 1, depending on the current input.

Slicking (Sleeking): Smoothing the surface of molds.

Slide Dimming: Is achieved through the linear movement up and down or horizontal of a slide mechanism to control the lighting level.

Slide Gate: A valve which employs a plate that slides in and out of the valve body as a means of stopping flow.

Slide Gate Valve: Slide gate valves are mechanical devices used to restrict or shut-off the flow of a substance through a transport system such as piping. Slide gate valves use a flat plate that slides in a channel until it blocks the path of the flow. The terms slide gate and knife gate are often used interchangeably, though slide gate valves are commonly used in dry bulk handling systems to control the flow of granular substances.

Slide Switch: A switch having a sliding actuating member which makes or breaks the switch contact mechanism.

sliding correlation : sliding correlation a principle of operation of a correlation receiver in channel measurement, where pseudo-random sequences are utilized. The transmitted signal consists of a carrier modulated (typically employing phase shift keying) by a pseudorandom sequence. The received signal is correlated (multiplied) by a similar reference signal, in which the pseudorandom sequence has a clock rate slightly lower than in the transmitted signal. The difference in clock frequencies causes the relative phase (chip position) of the pseudorandom sequences to slide by each other. The output of a sliding correlator is a time-scaled version of the auto-correlation function of the pseudorandom sequence. The time-scaling factor depends on the difference of the clock frequencies, and typically cannot be lower than 1000 without significant distortion in the resulting correlation function. This sets an upper bound to the rate of producing complete autocorrelation functions, making sliding correlation not ideally suited to measurement of channels with fast time variance. A sliding correlator must be implemented using analogue signal processing. See also stepping correlation.

sliding mode : sliding mode the motion of a dynamical system's trajectory while confined to a sliding surface.

sliding mode control : sliding mode control a discontinuous control in which a sliding mode is deliberately induced. The design of a sliding mode controller consists of two phases. In the first phase, a sliding surface is specified by a designer. Then, in the second phase, feedback gains are selected so that the controlled system's trajectories are driven toward the sliding surface. The role of a sliding mode controller is to drive the system's trajectories to the surface and to maintain them on the surface, in sliding mode, for all subsequent time. While in sliding, the system is not affected by matched uncertainties. Furthermore, the system in sliding is governed by a reduced set of differential equations. This is called the order reduction, and it is a very useful feature in designing sliding mode controllers.

sliding mode observer : sliding mode observer See sliding mode state estimator.

sliding mode state estimator : sliding mode state estimator state estimators of uncertain dynamical plants in which the error between the state estimate and the actual state exhibits sliding mode behavior on a sliding surface in the error space.

sliding surface : sliding surface a surface in the state space specified by a designer of a variable structure sliding mode controller. The role of a sliding mode controller is to drive the system's trajectories to the surface and to maintain them on the surface for all subsequent time. Alternative terms for sliding surface are switching surface, discontinuity manifold, equilibrium manifold.

sliding termination : sliding termination a precision air-dielectric coaxial transmission line that consists of a moveable, tapered termination used as an impedance standard for calibrating vector network analyzers and in other precision microwave measurement applications.

sliding window : sliding window in an ARQ protocol, the (sliding) window represents the sequence numbers of transmitted packets whose acknowledgments have not been received. After an acknowledgment has been received for the packet

whose sequence number is at the tail of the window, its sequence number is dropped from the window and a new packet whose sequence number is at the head of the window is transmitted, causing the window to slide one sequence number.

sliding-mode control : sliding-mode control a bang-bang control technique that confines the state space trajectory to the vicinity of a sliding line. Assuming a second-order system, the sliding line is defined as $ax_1 + bx_2 = D$, where x_1 and x_2 are the state variables and a and b are constant coefficients determined by the desired control law. The sliding line exists if the trajectories of the subcircuits on either side of the line are directed toward the sliding line. The sliding line is stable if the motions along the sliding line are toward an operation point. The ideal overall trajectory is independent of the trajectories of the subcircuits.

Slimline-Single Pin: A fluorescent lampholder having a single pin contact and accepting fluorescent lamps of the T-8 or T-12 types, 1" or 1 1/2" in diameter and in a smaller version the T-6 type, 3/4" in diameter.

Slinging: A coating defect consisting of random spots of coating deposited on coated sheets or adjacent machinery that appear raised above the surrounding substrate. Slinging and misting are synonymous, with misting being fine droplets.

slip: in an induction motor, slip is defined as the ratio of the slip speed to the synchronous speed. The slip speed is the difference between the synchronous speed and the speed of the rotor. See also synchronous speed.

slip: per unit speed by which the rotor falls behind the stator field. Slip is positive for induction motors and negative for induction generators.

Slip: Slip is used in two forms. One is the slip RPM which is the difference between the synchronous speed and the full load speed. When this slip RPM is expressed as a percentage of the synchronous speed, then it is called percent slip or just "slip." Most standard motors run with a full load slip of 2% to 5%.

Slip : Internal leakage of hydraulic fluid.

Slip Casting: In ceramics, a pouring slip, a water suspension of finely ground clay, into a plaster of paris mold. After it hardens it is dried and fired.

Slip Direction: The crystallographic direction in which translation of slip takes place.

slip frequency: slip frequency the frequency of the rotor induced currents in an induction machine. Denoted by f_{sl} , the slip frequency is given by slip stator frequency (f_s) and is the prime frequency used in slip frequency control of induction machines.

Slip Line: Trace of a slip plane on a viewing surface.

Slip Plane: The crystallographic plane on which slip occurs in a crystal.

slip power recovery control : slip power recovery control a method of controlling the speed of a wound rotor induction machine by recovering the slip frequency power from the rotor to an AC power source or mechanical shaft through the converter connected to the rotor windings of the motor. Slip power recovery control reduces the losses that occur with rotor resistance control.

slip rings: The rotating contacts which are connected to the loops of a generator.

Slippage Scratch: See ?Scratch, Tension?.

slip-ring contact : slip-ring contact a rotating, brush-contacted ring electrode connected to one end of a coil in an AC generator.

Slit: To slit steel is simply to cut it. The most common slitter available is a pair of scissors. The slitters used in the mill have circular blades that resemble washers. These rotate as the steel passed through them. The slitters have a payoff reel and a take up reel which pass the steel through the slitter knives. Between these two reel are two shafts, one above the steel and one below the steel. The round slitter knives are placed on the shafts and adjusted so that they cut off the edges of the steel to produce a good edge and/or cut the steel into narrow strips of the width the customer wants.

Slit Edge: The edges of sheet or strip metal resulting from cutting to width by rotary slitters.

Slitter: 1) Area on the Pickler where the strip is sidetrimmed (slit) to its proper width. 2) Sidetrims the edges of the strip to certain width in the customer's specifications, or the vertical cutting of coil material to form narrow strip product.

Slitter Hair: See ?Hair, Slitter?.

Slitter Heads: Mechanical housings that hold internal and external parts of the slitter knives.

Slitting : Cutting a sheet of steel into narrower strips to match customer needs. Because steel mills have limited flexibility as to the widths of the sheet that they produce, service centers normally will cut the sheet for the customer.

Slitting Stock: Slitting stock is produced with the knowledge that the product will be further processed by mill customer. Mill produces the final gauge but not the final width. The customer will do additional slitting/shearing.

Slivers: Slivers are due to defective teeming of the molten metal and to a tearing of corners of the steel in blooming, roughing, or finishing. Tearing is attributed to many things, such as overoxidation in the open hearth, or burning during reheating or soaking.

slope detector : slope detector a circuit consisting of an LC tuned circuit, a detector diode, and a filter circuit that has an IF set to be on the most linear portion of the response curve. The circuit converts FM to AM by having the frequency changes from the FM signal cause the signals to move up and down the response curve which results in amplitude variations.

Slope mine: A mine that reaches the coal bed by means of an inclined opening.

Slot: A physical position in a rack in a storage pool that is intended to be occupied by an intact assembly or equivalent (that is, a canister or an assembly skeleton).

slot : slot a space between the teeth used to place windings in electrical machines.

slot pitch : slot pitch the angular distance (normally in electrical degrees) between the axes of two slots.

slotless motor : slotless motor permanent magnet brush-less DC motor in which stator teeth are re-moved and the resulting space is partially filled with copper. The slotless construction permits an increase in rotor diameter within the same frame size, or alternatively an in-crease in electric loading without a corre-sponding increase in current density.

slotted ALOHA : slotted ALOHA a multiple access proto-col. In slotted ALOHA, time is divided into frames. Any user is allowed to transmit dur-ing any frame. The possible collisions result in retransmission at a later time. See also pure ALOHA.

slotted line : slotted line coax or waveguide with a lon-gitudinal slot that accommodates a voltage probe that can measure the voltage anywhere along the slot. Typically used to measure standing wave ratio (SWR).

slow start : slow start a congestion control algorithm that rapidly determines the bandwidth avail-able to a transmitter by doubling the number of packets sent each round trip until losses are detected. This algorithm is "slow" when compared to the alternative of sending pack-ets at the maximum rate achievable by the transmitter.

slow wave : slow wave a wave whose phase velocity is slower than the velocity of light. For ex-ample, for suitably chosen helixes the wave can be considered to travel on the wire at the velocity of light, but the phase velocity is less than the velocity of light by the factor that the pitch is less than the circumference. Slow wave may also be present on structures like coplanar waveguides.

slowness surface: slowness surface a plot of the reciprocal of the phase velocity as a function of direction in an anisotropic crystal.

slow-wave structure : slow-wave structure a short microwave transmission line in a traveling wave tube in which the longitudinal phase velocity of trav-eling microwave is slowed down to almost equal speed of electrons in the interacting electron beam of the tube.

Sludge: A dense, slushy, liquid-to-semifluid product that accumulates as an end result of an industrial or technological process designed to purify a substance. Industrial sludges are produced from the processing of energy-related raw materials, chemical products, water, mined ores, sewerage, and other natural and man-made products. Sludges can also form from natural processes, such as the run off produced by rain fall, and accumulate on the bottom of bogs, streams, lakes, and tidelands.

Sluice Water: Raw water that is boosted in pressure to approximately 180 psi. This water is used by the Venturies for soot blowing and tap out, as ditch water (sluice water) for tapping the boilers and dumping the ash boxes, and as fill for boiler raw water hydrostatic tests.

Slurry: A viscous liquid with a high solids content.

Slurry dam: A repository for the silt or culm from a preparation plant.

SMA connector : SMA connector a subminiature coaxial connector with both male and female ver-sions capable of an upper frequency limita-tion of about 26 GHz.

Sma. : See signal message address. (also known as a plain language address (plad)).

small computer systems interface (SCSI) : small computer systems interface (SCSI) a high-speed parallel computer bus used to interface peripheral devices such as disk drives.

small disturbance : small disturbance a disturbance for which the equation for dynamic operation can be linearized for analysis.

small disturbance stability : small disturbance stability power sys-tem stability under small disturbances, which can be studied by using linearized power sys-tem models.

small gain theorem : small gain theorem a sufficient condition for the robust stability of the closed-loop sys-tem. It requires the open-loop operator of the system to have a norm less than one. For linear systems, the small gain theorem guar-antees well posedness while in the nonlin-ear case it should be assumed. The theorem may be highly conservative for structured un-certainties. In some cases the conservatism could be decreased by the use of structured norms.

Small pickup truck: A pickup truck weighing under 4,500 lbs GVW.

Small power producer (SPP): Under the Public Utility Regulatory Policies Act (PURPA), a small power production facility (or small power producer) generates electricity using waste, renewable (biomass, conventional hydroelectric, wind and solar, and geothermal) energy as a primary energy source. Fossil fuels can be used, but renewable resource must provide at least 75 percent of the total energy input. (See Code of Federal Regulations, Title 18, Part 292.)

small power producer : Refers to a producer that generates at least 75% of its energy from renewable sources.

small scale integration (SSI) : small scale integration (SSI) an early level of integration circuit fabrication that al-lowed approximately between 1 and 12 gates on one chip.

Small Side: Used to describe the side of the weld with the narrower width.

small signal amplifier : small signal amplifier amplifier designed for amplifying very low level signals. Typi-cally, small signal amplifiers have an AC sig-nal magnitude that is 1/10 the DC value and operate under class A amplifier biasing con-ditions.

Small Winch: The tool used to position the big winch's cable and hook. It is located at the Coal Bucket Operator's door leading to the unloading tracks.

smart antenna : smart antenna a set of antennas used in an intelligent way in one receiver to improve the performance of a communication link. See also beamforming, space division multiple access.

smart card : smart card credit-card-sized device con-taining a microcomputer, used for security-intensive functions such as debit transactions.

smart material : smart material one of a class of materials and/or composite media having inherent intelligence together with self-adaptive capabilities to external stimuli applied in proportion to a sensed material response. Also called intelligent material.

smart pixel : smart pixel an element in an array of light detectors that contains electronic signal processing circuitry in addition to the light detector; a spatial light modulator in which each pixel is controlled by a local electronic circuit. Smart pixels are fabricated with VLSI technology. Each light modulating pixel is connected to its own tiny electronic circuit adjacent to the pixel. The circuit may consist of detector, switching or logic circuit, memory, and source or additional shutter. It is an advanced, optically addressed spatial light modulator and still immature.

smart sensor : smart sensor sensor with inherent intelligence via built-in electronics.

Smelt: To melt ores, separating the metallic constituents.

Smelter: Facility is used to extract metal concentrates found inside mined ore. The ore will often contain more than one kind of metal concentrate and this facility also separates them.

Smelting: A metallurgical thermal process in which a metal is separated in fused form from nonmetallic materials or other undesired metals with which it is associated.

Smith Hammer: Any power hammer where impression dies are not used for reproduction of commercially exact forging.

Smls: Seamless pipe with no weld in the circumference.

smoothing : smoothing (1) an estimation procedure in which a past value of the state vector (see the definition) is estimated based on the data available up to the present time.(2) the removal from an image (signal) of high-frequency components obtained, e.g., through a convolutional averaging or Gaussian filter, usually performed to remove additive speckle noise. (3) any process by which noise is suppressed, following a comparison of potential noise points with neighboring intensity values, as for mean filtering and median filtering. Also, a process in which the signal is smoothed, e.g., by a low-pass filter, to suppress complexity and save on storage requirements.

Smothering Ring: Ring that has 16 steam jets and sits on V.C. Hood that helps to keep dirt and flames in boiler while on 02 blow.

SMPS: switched-mode power supply

Smudge: A smear on the plate that can be caused by sanding a roll (mainly in the hot rinse).

Sna/sdlc : See sdlc.

Snake: Any crooked surface defect in a plate, resembling a snake.

Snaking: A series of reversing lateral bows in coil products. This condition is caused by a weaving action during an unwinding or rewinding operation.

Snap-In Lampholder: A special type of incandescent lampholder supplied with assembled side spring clips which snap into a hole cut in a flat panel, securing the lampholder in place without additional fastening means.

SNG: See Synthetic Natural Gas

SNM: Shielded non-metallic sheathed cable.

snoop : snoop in hardware systems, a process of examining values as they are transmitted in order to possibly expedite some later activity.

snooping bus : snooping bus a multiprocessor bus that is continuously monitored by the cache controllers to maintain cache coherence.

snow noise : snow noise noise composed of small, white marks randomly scattered throughout an image. Television pictures exhibit snow noise when the reception is poor.

Snubber: Hydraulic roll used to prevent the outside wrap from unwinding while threading the strip into the pinch roll and leveler.

snubber : snubber an auxiliary circuit or circuit elements used to control the rate of rise or fall of the current flowing into a power electronic device or the rate of fall of the voltage across the device during turn-off. Snubbers are used to limit $dv=dt$ and $di=dt$ and eliminate ringing in a switching circuit during switching transients. Both dissipative and nondissipative snubbers are used. See also soft switching.

Snubber Roll: A small roll used with a bridle roll. The purpose of the snubber roll is to hold the strip against the bridle roll.

SO: Hard service cord, same construction as type S except oil-resistant neoprene jacket. 600V, 60°C to 90°C

SO2: See Sulfur Dioxide.

Soaking: Prolonged heating of a metal, furnace or ladle at a selected temperature.

Soap: Slang for "Cable Pulling Lubricant".

socket outlet : A device, provided with female contacts, which is intended to be installed with the fixed wiring, and intended to receive a plug. A luminaire track system is not regarded as a socket outlet system.

Sodium lights: A type of high intensity discharge light that has the most lumens per watt of any light source.

Sodium Silicate: See Water Glass.

Sodium silicate: A grey-white powder soluble in alkali and water, insoluble in alcohol and acid. Used to fireproof textiles, in petroleum refining and corrugated paperboard manufacture, and as an egg preservative. Also referred to as liquid glass, silicate of soda, sodium metasilicate, soluble glass, and water glass.

Sodium tripolyphosphate: A white powder used for water softening and as a food additive and texturizer.

sodium-cooled reactor : sodium-cooled reactor a nuclear reactor in which the heat is removed from the core by means of

circulating liquid metallic sodium.

SOE: Sequence of Events

soft computing : soft computing is an association of computing methodologies centering on fuzzy logic, artificial neural networks, and evolutionary computing. Each of these methodologies provide us with complementary and synergistic reasoning and searching methods to solve complex, real-world problems. See also fuzzy logic, neural network.

soft contaminant : soft contaminant a contaminant that to first order is not absorbed by X-rays, and which therefore tends to remain undetected in X-ray images: typical soft contaminants are rubber, wood and many types of plastic (though much depends on the particular atomic composition of the material).

soft decision : soft decision demodulation that outputs an estimate of the received symbol value along with an indication of the reliability of that value. It is usually implemented by quantizing the received signal to more levels than there are symbol values.

soft facimile : soft facimile for low-capacity channels, images are transmitted and displayed in a progressive (stage by stage) manner. A crude representation is first transmitted and then details are added at each stage. This is referred to as soft facimile. See also progressive transmission.

soft hand-off : soft hand-off a hand-off scheme in a CDMA cellular system such as that specified by the IS-95 standard where signal transmission occurs through multiple base stations during the hand-off process. The multiple signal components received from the different base stations are combined using some type of diversity combining. See also hand-off, IS-95.

soft iron : soft iron a term used to describe iron that has a low coercivity. Note that soft refers to the magnetic properties of the material, not necessarily the physical properties.

soft magnetic material : soft magnetic material a magnetic material that does not retain its magnetization when the magnetizing field is removed; a material with low coercivity and high permeability.

soft real-time system : soft real-time system a real-time system in which failure to meet deadlines results in performance degradation but not necessarily failure. Compare with firm real-time, hard real-time.

Soft Skin Rolled Temper (No. 4 Temper): In low carbon rolled strip steel, soft and ductile. Produced by subjecting annealed strip to a pinch pass or skin rolling (a very light rolling).

soft switching : soft switching the control of converter switching in order to utilize device and component parasitics and resonance conditions to enable zero current switching (ZCS) or zero voltage switching (ZVS), thereby reducing switching losses, stress and EMI. Typically this is performed with additional resonant components and switches that are activated only during the switching transients. Soft switching also allows higher switching frequencies in order to reduce the converter size and weight, thus increasing the power density.

soft X-ray lithography : soft X-ray lithography See EUV lithography.

Softcooling : Soft cooling is the practice of cooling computer components by using CPU power saving technology.

softer hand-off : softer hand-off similar to the concept of soft hand-off except that it involves transmission/reception through multiple antenna sectors of the same cell as opposed to multiple base stations. In contrast to soft hand-off, softer hand-off need not involve the mobile telephone system switch in the hand-off process.

soft-starter: soft-starter a motor starter that provides a ramp-up of voltage supplied to the motor at starting with the objective of reducing the starting current and torque.

software design : software design a phase of software development life cycle that maps what the system is supposed to do into how the system will do it in a particular hardware/software configuration.

software development life cycle : software development life cycle a way to divide the work that takes place in the development of an application.

software engineering : software engineering systematic development, operation, maintenance, and retirement of software.

software evolution : software evolution the process that adapts the software to changes in the environment where it is used.

software interrupt : software interrupt a machine instruction that initiates an interrupt function. Software interrupts are often used for system calls, because they can be executed from anywhere in memory and the processor provides the necessary return address handling. Also known as a supervisor call instruction (SVC) (IBM mainframes) or INT instruction (Intel X86).

Software Modeling: Software modeling is a term that covers a broad category of computer-based modeling tools and practices. Computer software is used to simulate, or model, a process or component for the purpose of allowing the user to investigate and interpret information. A common example of software modeling is the use of computer aided drafting (CAD) software to create computer representations of real-life components.

software reengineering : software reengineering the reverse analysis of an old application to conform to a new methodology.

Software. : A computer program or set of computer programs held in some kind of storage medium and loaded into read/write memory (ram) for execution. Compare with firmware and hardware.

Soh, start of header. : A control character used to indicate the beginning of the header.

soil electrode : soil electrode an electrical connection to the soil, often in the form of a metal stake driven into the earth.

Solar Cell: Solar cell, or photovoltaic cell, is an electrical device that converts the solar energy directly into electricity

Solar cell: A device that converts light energy to electrical energy. Also called a photovoltaic cell.

Solar cell: See Photovoltaic cell

Solar Cell: See "Photovoltaic Cell".

Solar cell: See 'Photovoltaic cell.'

solar cell : An device which converts energy from the sun directly into electrical energy.

Solar constant: The average amount of solar radiation that reaches the earth's upper atmosphere on a surface perpendicular to the sun's rays; equal to 1353 Watts per square meter or 492 Btu per square foot.

Solar constant: The strength of sunlight; 1353 watts per square meter in space and about 1000 watts per square meter at sea level at the equator at solar noon.

Solar cooling: The use of solar thermal energy or solar electricity to power a cooling appliance. There are five basic types of solar cooling technologies absorption cooling, which can use solar thermal energy to vaporize the refrigerant; desiccant cooling, which can use solar thermal energy to regenerate (dry) the desiccant; vapor compression cooling, which can use solar thermal energy to operate a Rankine-cycle heat engine; and evaporative coolers ("swamp" coolers), and heat-pumps and air conditioners that can be powered by solar photovoltaic systems.

Solar declination: The apparent angle of the sun north or south of the earth's equatorial plane. The earth's rotation on its axis causes a daily change in the declination.

Solar dish: See Parabolic dish

Solar energy: The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

Solar Energy: Energy from the sun. The heat that builds up on surfaces exposed to the sun is an example.

Solar energy: Energy from the sun. The heat that builds up in your car when it is parked in the sun is an example of solar energy.

Solar noon: That moment of the day that divides the daylight hours for that day exactly in half. To determine solar noon, calculate the length of the day from the time of sunset and sunrise and divide by two.

Solar pond: A body of water that contains brackish (highly saline) water that forms layers of differing salinity (stratifies) that absorb and trap solar energy. Solar ponds can be used to provide heat for industrial or agricultural processes, building heating and cooling, and to generate electricity.

Solar power : Solar power is an electrical device that converts the solar energy into power directly

Solar power tower: A solar energy conversion system that uses a large field of independently adjustable mirrors(heliostats) to focus solar rays on a near single point atop a fixed tower (receiver). The concentrated energy may be used to directly heat the working fluid of a Rankine cycle engine or to heat an intermediary thermal storage medium (such as a molten salt).

Solar Powered Ultrafiltration System: Solar powered ultrafiltration systems utilize photovoltaic cells to provide the energy needed to run the water filtration system. These systems are capable of operating without any connection to the electrical power grid. The filtration system is capable of delivering safe drinking water from sources such as lakes, rivers, streams or other surround water supplies.

Solar radiation: A general term for the visible and near visible (ultraviolet and near-infrared) electromagnetic radiation that is emitted by the sun. It has a spectral, or wavelength, distribution that corresponds to different energy levels; short wavelength radiation has a higher energy than long-wavelength radiation.

Solar spectrum: The total distribution of electromagnetic radiation emanating from the sun. The different regions of the solar spectrum are described by their wavelength range. The visible region extends from about 390 to 780 nanometers (a nanometer is one billionth of one meter). About 99 percent of solar radiation is contained in a wavelength region from 300 nm (ultraviolet) to 3,000 nm(near-infrared). The combined radiation in the wavelength region from 280 nm to 4,000 nm is called the broadband, or total, solar radiation.

Solar spectrum: The total distribution of electromagnetic radiation emanating from the sun.

Solar thermal collector: A device designed to receive solar radiation and convert it to thermal energy. Normally, a solar thermal collector includes a frame, glazing, and an absorber, together with appropriate insulation. The heat collected by the solar collector may be used immediately or stored for later use. Solar collectors are used for space heating; domestic hot water heating; and heating swimming pools, hot tubs, or spas.

Solar thermal collector, high temperature: A collector that generally operates at temperatures above 180 degrees Fahrenheit.

Solar thermal collector, low-temperature: A collector that generally operates at temperatures below 110 degrees Fahrenheit. Typically, it has no glazing or insulation and is made of plastic or rubber, although some are made of metal.

Solar thermal collector, medium-temperature: A collector that generally operates at temperatures of 140 degrees F to 180 degrees Fahrenheit, but can also operate at temperatures as low as 110 degrees Fahrenheit. Typically, it has one or two glazings, a metal frame, a metal absorption panel with integral flow channels or attached tubing (liquid collector) or with integral ducting (air collector) and insulation on the sides and back of the panel.

Solar thermal collector, special: An evacuated tube collector or a concentrating (focusing) collector. Special collectors operate in the temperature range from just above ambient temperature (low concentration for pool heating) to several hundred degrees Fahrenheit (high concentration for air conditioning and specialized industrial processes).

Solar thermal electric: Method of producing electricity from solar energy by using focused sunlight to heat a working fluid, which in turn drives a turbogenerator.

solar thermal electric : A process that generates electricity by converting incoming solar radiation to thermal energy.

Solar thermal panels: A system that actively concentrates thermal energy from the sun by means of solar collector panels. The panels typically consist of flat, sun-oriented boxes with transparent covers, containing water tubes or air baffles under a

blackened heat absorbent panel. The energy is usually used for space heating, for water heating, and for heating swimming pools.

Solar thermal parabolic dishes: A solar thermal technology that uses a modular mirror system that approximates a parabola and incorporates two-axis tracking to focus the sunlight onto receivers located at the focal point of each dish. The mirror system typically is made from a number of mirror facets, either glass or polymer mirror, or can consist of a single stretched membrane using a polymer mirror. The concentrated sunlight may be used directly by a Stirling, Rankine, or Brayton cycle heat engine at the focal point of the receiver or to heat a working fluid that is piped to a central engine. The primary applications include remote electrification, water pumping, and grid-connected generation.

Solar trough or solar parabolic trough: See Parabolic trough

Solar-grade silicon: Intermediate-grade silicon used in the manufacture of solar cells. Less expensive than electronic-grade silicon.

solar-thermal-electric conversion : solar-thermal-electric conversion collection of solar energy in thermal form using flat-plate or concentrating collectors and its conversion to electrical form.

Sold: That material which has a tendency to resist any attempt to change its size or shape.

Solder: Any of various fusible alloys, usually tin and lead, used to join metallic parts. In electronics used to connect components to PC boards or to aid the conductivity and mechanical junctions of connections and splices.

Solder : Solder is a fusible metal alloy used to join together metal workpieces and having a melting point below that of the workpiece(s).

Solder Embrittlement: Reduction in ductility of a metal or alloy, associated with local penetration by molten solder along grain boundaries.

Solder less Breadboard: A breadboard is used to build and test circuits quickly before finalizing any circuit design. The breadboard has many holes into which circuit components like ICs and resistors, capacitors LDR etc. can be inserted.

Solder Wick: A fine mesh of flux-coated, copper strands that absorbs solder when heated

Soldering : Soldering is a process in which two or more metal items are joined together by melting solder

Soldering Iron: The iron through which two or more metal pieces are joined by heating the iron.

Solenoid: A solenoid is a type of electromagnet which is used to generate a controlled magnetic field

Solenoid: Electromechanical device that use electromagnetism to produce a mechanical operation.

solenoid: A coil of wire wound uniformly on a cylindrical former, having a length which is large compared with its radius.

solenoid : solenoid a wound cylindrical and mag-netic material assembly used typically for producing linear motions.

solid angle: The angle subtended at the center of a sphere by an area on its surface numerically equal to the square of the radius. [Unit steradian, sr].

Solid Conductor: A solid conductor is a conductor consisting of a single wire.

solid laser : solid laser laser in which the amplifying medium is a solid.

Solid oxide fuel cell (SOFC): Solid oxide fuel cell (SOFC) is an ultimate power-generating device

Solid Solution: A solid crystalline phase containing two or more chemical species in concentrations that may vary between limits imposed by phase equilibrium.

Solid State: A device, circuit or system whose operation is dependent upon any combination of optical, electrical, or magnetic phenomena within a solid. Generally referred to as having an infinite life and no moving parts.

solid state disk (SSD) : solid state disk (SSD) very large-capacity, but slow, semiconductor memory that may be used as a logical disk, extended main memory, or as a logical cache between main memory and conventional disk. SSD is typically constructed from DRAM and equipped with a battery to make it non-volatile. First used in IBM 3090 and Cray-XMP computer systems.

solid state laser : solid state laser laser in which the amplifying medium is a solid, sometimes considered to exclude semiconductor lasers.

solid state power amplifier (SSPA) : solid state power amplifier (SSPA) a high-power, multistage amplifier using semiconductor devices.

solid state relay: A completely electronic switching device with no moving parts or contacts.

solid state relay : solid state relay a protective relay that employs analog electronics, logic electronics, and magnetics to implement the operating logic.

Solid Wire: A solid wires usually cylindrical flexible rod of metal. Wires are used to bear mechanical loads or electricity and telecommunication signals.

Solidification: The physical process of change from a liquid to a solid state.

solidly grounded system : solidly grounded system a grounding scheme in which the neutral wire of a power system is connected to ground at frequent intervals so as to minimize the impedance between neutral and ground.

Solid-state: Solid state is a state at which substance possesses rigidity have definite shape and size

Solid-state: The term that describes components or circuits that use semiconductors technology.

Solid-state storage: Solid-state storage (SSS) is a type of computer storage media that is made from silicon microchips.

Solidus: In a constitutional diagram, the locus of points representing the temperatures at which various components finish freezing on cooling or begin to melt on heating.

soliton : soliton an optical pulse that preserves its shape while propagating by balancing fiber dispersion and nonlinearity.

soliton transmission system : soliton transmission system often termed the fifth generation of fiber optic communication systems. See also soliton.

Solute: The component of either a liquid or solid solution that is present to the lesser or minor extent; the component that is dissolved in the solvent.

Solution Annealing: Solution annealing is a process performed on steels. In our case, these are primarily the 300 series stainless. The process consists of heating the material up to a temperature above 1950°F and holding it long enough for the carbon to go into solution. After this, the material is quickly cooled to prevent the carbon from coming out of solution. Solution annealed material is in its most corrosion resistant and ductile (formable) condition.

solution domain : solution domain electromagnetic fields can be represented as a function of time, or a time-domain description, or as a function of frequency using a (usually) Fourier transform, which produces a frequency-domain description.

Solution Heat Treatment: A heat treatment in which an alloy is heated to a suitable temperature, held at that temperature long enough to cause one or more constituents to enter into solid solution, and then cooled rapidly enough to hold these constituents in solution.

Solvent Pop: Blistering caused by entrapped solvent during baking, possibly caused by short flashoff or improper solvent balance.

Solvent Refined Coal (SRC): A tar-like fuel produced from coal when it is crushed and mixed with a hydrocarbon solvent at high temperature and pressure.

Solvus: In a phase or equilibrium diagram, the locus of points representing the temperature at which solid phases with various compositions coexist with other solid phases; that is, the limits of solid solubility.

sonar : sonar acronym for "sound navigation and ranging" adopted in the 1940s, involves the use of sound to explore the ocean and under-water objects.

Sonar signalling/supersonic telegraphy.: The process of transmitting and receiving morse signals by sonar apparatus.

Sonobuoy .: An acoustic device, used mainly for the detection of submarines which, when activated, transmits information by radio.

sonorant : sonorant the class of phonemes with a formant-like spectrum. For example, vowels and nasals exhibit a spectrum that is based on formants.

SOO: Same as SO but with oil-resistant insulation.

Soot Blower: Same as a deslagger. A rotating retractable steam lance used to remove slag from the boiler tubes and walls.

Soot Pit: Hoppers located in the exhaust side of the boiler that serve the purpose of collecting the heavier particles of soot and debris that are carried in the exhaust gas stream. The soot pits are drained every turn by a Venturi type suction system.

Sorbic Pearlite: Structure of steel resulting, on cooling under the proper conditions, from the decomposition of austenite; has a fine, lamellar appearance.

Sorry Weld: Weld which computer passes by; the computer is told not to cut this weld No. 9 Tandem.

SOTF: Switch on to Fault (protection).

sound carrier : sound carrier in a TV signal, the FM carrier that transmits the audio part of the program.

Sound Dampening Foam: Sound dampening foam is a foam layer specifically designed to reduce the passage of sound waves through the foam. Sound dampening foam can come in the form of spray foams, foam blankets or stiff foam panels. Open cell foam is typically used for sound dampening applications due to its better sound absorption properties over close cell foam.

Sound navigation and ranging : It is a technique that uses sound propagation to navigate, communicate with or detects objects on or under the surface of the water.

Sound powered .: A term denoting that a device (e.g. A microphone) derives its power by converting acoustic energy to electrical power without the aid of an external power supply.

Sound signalling .: A means of communication that utilizes sound waves. Whistles, sirens, bells and signal devices are used to transmit sound messages consisting of prearranged signals. Sound may also be used for emergency communication using international morse code.

sound velocity profile (SVP) : sound velocity profile (SVP) description of the speed of sound in water as a function of water depth.

Source: General term to describe devices that provides electrical energy at their output terminals to operate a circuit. Examples battery, solar cell, generator and alternator, or power supply.

source : source (1) refers to the signal generator/device that generates the RF, microwave, or micromilliwatt frequencies.(2) the terminal of a FET from which electrons flow (electrons in the FET channel flow from the source, and current flow is always in the negative direction of electron movement, since electrons are negative). It is usually considered to be the metal contact at the surface of the die.

source code : source code (1) software code written in a form or language meant to be understood by programmers. Must be translated to object code in order to run on a computer.(2) a set of codewords used to represent messages, such that redundancy is removed, in order to require less storage space or transmission time.

source coding : source coding the process of mapping signals onto a finite set of representative signal vectors referred to as codewords.

source encoder : source encoder a device that substantially reduces the data rate of linearly digitized audio signals by

taking advantage of the psychoacoustic properties of human hearing, eliminating redundant and subjectively irrelevant information from the output signal. Transform source encoders work entirely within the frequency domain, while time-domain source encoders work primarily in the time domain. Source decoders reverse the process, using various masking techniques to simulate the properties of the original linear data.

source follower : source follower See common drain amplifier .

Source material: The term "source material "means (1) uranium, thorium, or any other material that is determined by the Atomic Energy Commission pursuant to the provisions of section 61 of the Atomic Energy Act of 1954, as amended, to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.

Source of authority (soa) . : An attribute authority that a privilege verifier for a particular resource trusts as the ultimate authority to assign a set of privileges

source operand : source operand in ALU operations, one of the input values.

source routing : source routing method of routing packets in which the entire route through the network is prepended to the packet. From any node in the route, the next entry in the source route determines the node to which the packet should next be forwarded.

source-coupled pair : source-coupled pair See differential pair.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia;

Southern: Mobile, AL, Savannah, GA, Miami, FL, Tampa, FL, New Orleans, LA, Wilmington, NC, San Juan, PR, Charleston, SC, Dallas-Fort Worth, TX, El Paso, TX, Houston-Galveston, TX, Laredo, TX, Virgin Islands.

Southern Appalachian Region: Consists of Alabama, and the Tennessee counties of Bledsoe, Coffee, Franklin, Grundy, Hamilton, Marion, Rhea, Sequatchie, Van Buren, Warren, and White.

SOW: Water resistant neoprene jacketed portable cord (C.S.A.).

SP-1: All rubber, parallel-jacketed, two-conductor light duty cord for pendant or portable use in damp locations. 300V

SP-2: Same as SP-1, but heavier construction, with or without third conductor for grounding purposes. 300V

SP-3: Same as SP-2, but heavier construction for refrigerators or room air conditioners. 300V

Space (spacing signal) . : The signal corresponding to the active condition in a teleprinter. Normally space is the signalling condition which produces a start signal (ita no 2).

Space Centered (Concerning Space Lattices): Body centered.

space charge: In an electrode assembly, a cloud of free electrons surrounding the cathode.

Space diversity (spaced serial diversity) . : A term used to designate any method of transmission and/or reception for combating effects of flat or selective fading, which employs antennae having common polarization and spatial separations.

space division multiple access (SDMA) : space division multiple access (SDMA) multiple access technique where the users' channels are separated into spot-beams with highly directional or adaptive antennas allowing reuse of time and frequency resources between users. Used in conjunction with FDMA/TDMA/CDMA.

Space heating: The use of energy to generate heat for warmth in housing units using space-heating equipment. The equipment could be the main space-heating equipment or secondary space-heating equipment. It does not include the use of energy to operate appliances (such as lights, televisions, and refrigerators) that give off heat as a byproduct.

Space Lattice (Crystal): A system of equivalent points formed by the intersections of three sets of planes parallel to pairs of principal axes; the space lattice may be thought of as formed by the corners of the unit cells.

Spacer Cable: A distribution cable designed to be used in conjunction with insulating spacers which maintain conductor spacing in overhead line installations. This cable is considered uninsulated and installed likewise, but the covering on the conductors does allow for conductor close proximity and reduce faults due to the touching of tree limbs.

spacer cable : spacer cable another name for messenger cable.

Spacers: Steel plates used to separate coils stacked on top of each other in batch annealing.

Spacing-to-Mounting Height Ratio: Ratio specification used to insure that fixtures are adequately spaced, thus preventing "hotspots"

Spalling: The cracking and flaking of metal particles from a surface.

Span: 1) Refers to the distance between two poles of a transmission or distribution line. 2) The algebraic difference between the upper and lower values of a range.

Span (Full-Scale Output for FSO): The algebraic difference in the electrical output when the maximum and minimum pressure is applied to the input.

Spangle: Finish achieved when zinc is allowed to freeze naturally on the sheet galvanize. Achieved by adding antimony to the hot dip bath.

Spangle Free: A galvanized product in which the spangle formation has been suppressed; accomplished by eliminating Antimony and Lead in the molten zinc bath during the production of Hot Dipped Galvanized. Galvannealed is always spangle free.

Spanner Wrench: Special wrench used in tightening arbor nuts.

Spare (1). : An ascii or ebcdic character that results in a 1-character-wide blank when printed.

Spare (2). : (in single-current telegraph communications) the open circuit or no-currentflowing condition.

Spare (3). : (in data communications) represents a binary 0.

spark gap : spark gap a pressurized high-current switch using a principle of electric field dis-ruption to start the electron flow.

Spark spread: A measurement of the difference between the price that a generator can obtain from selling one megawatt hour (MWh) of electricity and the cost of the natural gas needed to generate the MWh of electricity. Spark spread is a measure of potential profit for generating electricity on a particular day.

Spark Test: A highvoltage test performed on certain types of conductor during manufacture to ensure the insulation is free from defects.

Spark Test: A test designed to locate pin-holes in an insulated wire by application of an electrical potential across the material for a very short period of time while the wire is drawn through an electrode field.

Spark Testing: This is an inspection method for quickly determining the approxiamte analyst of steel. It is intended primarily for the separation of mixed steel and when properly conducted, is a fast, accurate and economical method of separation. It consists in holding the sample against a high speed grinding wheel and noting the character and color of the spark which is compared with samples of known analysis.

sparse equation : sparse equation when a set of linear si-multaneous equations has very few nonze-ros in any row, the system is said to be sparse. Normally for a system to be con-sidered sparse, less than 10% of the possible entries should be nonzero. For large inte-grated circuits, less than 1% of the possible entries are nonzero.

sparse matrix : sparse matrix a rectangular array of num-bers, most of whose elements are zero or null.

sparse vector : sparse vector in computer instruction processing, a matrix in which most elements have such small values that are treated as ze-ros. Special representation schemes can be used to save memory space, with a cost of increased execution time to access single el-ements of the matrix.

Spary Quenching: After solution heat treating, a mode of quenching in which a spray of water is directed upon material just removed from the furnace.

spatial domain : spatial domain the representation of a signal, usually an image, as a function of spa-tial coordinates. See also frequency domain.

spatial filtering : spatial filtering a technique used to either filter out interfering signals in a communica-tion system, or as a multiple access technique that enables two or more subscribers, con-trolled by the same base station to use the same time, frequency and code resources on the grounds of their physical location or spa-tial separation. See also beamforming.

spatial frequency : spatial frequency the variables of the 2-D Fourier transform of a function of spatial coordinates are referred to as horizontal and vertical spatial frequencies. The spatial fre-quency of a 2-D sinusoidal signal in a given dimension is the number of cycles per unit distance in that dimension.

spatial hole burning : spatial hole burning spatially localized reduction in the gain of a laser amplifier due to saturation by an intense signal; transverse spatial hole burning due to the transverse beam profile is distinguished from longitudi-nal spatial hole-burning due to the standing wave nature of the fields and possibly also to high gain per pass; spatial relaxation (or cross-relaxation) reduces spatial hole burn-ing.

spatial light modulator (SLM) : spatial light modulator (SLM) a device that alters both the spatial and temporal char-acter of a light beam. A three-port device with input, readout, and control or modula-tion ports. Modulation signals can be ap-plied either electrically, i.e., an electrically addressed spatial light modulator, or opti-cally, i.e., optically addressed spatial light modulator. Also called a light valve.

spatial light modulator in optical comput-ing : spatial light modulator in optical comput-ing a device for modulating amplitude or phase of light passing through it. If the input signal is a light beam, it is called optically ad-dressed spatial light modulator. If the input signal is electronic, it is called electrically ad-dressed spatial light modulator. Light mod-ulation is usually based on the electro-optic effect. In optical computing, an optically ad-dressed spatial light modulator is a device used as a medium for controlling or switching light using light. Since a light beam cannot directly affect another light beam, a spatial light modulator is required. The modulation process can be seen, first, as the modulat-ing light affecting the spatial light modula-tor; then the affected spatial light modulator modulates another light beam.

spatial power combining : spatial power combining the power gen-erated from many devices can be combined coherently into space. These techniques are used in order to alleviate circuit losses at high microwave frequencies.

spatial redundancy : spatial redundancy the redundancy be-tween samples of an image or random process that is a function of spatial coordinates. Im-ages typically exhibit a high degree of spatial redundancy which can be exploited to obtain a high compression ratio.

spatial resolution : spatial resolution (1) the ability to re-solve two closely spaced points or a periodic pattern. Rayleigh proposed the criterion that two stars could be resolved when the maxi-mum in the image pattern from one star co-incides with the first minimum in the other. Units of spatial resolution are lines or line pairs per millimeter.(2) a measure of the ability of a system to resolve spatial details in a signal. For a discrete image, spatial resolution generally refers to the number of pixels per unit length, giving possibly different horizontal and ver-tical spatial resolutions. See also frequency resolution.

spawn : spawn to create a new process within a multitasking computing system.

SPC: Submersible pump cable.

speaker verification : speaker verification a task that, unlike speaker identification, the speaker set for this problem is open.

As a consequence, one has to verify the given speaker against any potential impostor that is not known in advance. Basically, one cannot rely on the knowledge of the probability distribution of the “negative examples,” since there is no restriction on who is supposed to use the verification system.

Special Bar Quality (Sbq): SBQ represents a wide variety of higher quality carbon and alloy bars that are used in the forging, machining and cold drawing industries for the production of automotive parts, hand tools, electric motor shafts and valves. SBQ generally contains more alloys than merchant quality and commodity grades of steel bars, and is produced with more precise dimensions and chemistry.

Special collector: An evacuated tube collector or a concentrating (focusing) collector. Special collectors operate in the temperature range from just above ambient temperature (low concentration for pool heating) to several hundred degrees Fahrenheit (high concentration for air conditioning and specialized industrial processes).

Special contract rate schedule: An electric rate schedule for an electric service agreement between a utility and another party in addition to, or independent of, any standard rate schedule.

special handling (sph) : Special handling is the term applied to control measures implemented to afford additional security protection and/or limited access to certain communications beyond the protection normally afforded. These control measures may include user-approved software locks, security clearance of personnel at terminals and interface areas to relevant levels of access and the use of off-line cryptographic equipment, special keying variables, dedicated facilities or any combination of these to protect the passage of such communications through a c-e network.

Special Killed: 1.) Low carbon aluminum killed steels used mainly for extra deep drawing varieties of sheet and strip. 2) Steel deoxidized by silicon or aluminum or in combination to reduce the oxygen content to a minimum so that no reaction occurs during solidification of the metal.

Special Metals: Designates all alloys and metals produced at USSM other than stainless steels and precipitation hardenable stainless steels. Categories of special metals would include nickel, nickel base alloys, cobalt base alloys, titanium and titanium base alloys, glass sealing alloys (iron nickel), etc.

Special naphthas: All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Special nuclear material: The term "special nuclear material" means (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the Atomic Energy Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material.

Special operating group. : A group of four letters, identical in appearance with address groups, provided for use in the headings of messages to give special instructions.

Special Purpose Fuses: Fuses with special performance characteristics or rating intended to protect equipment or components under specified conditions.

Special purpose rate schedule: An electric rate schedule limited in its application to some particular purpose or process within one, or more than one, type of industry or business.

Special Treatment: A treatment applied to electrogalvanized to enhance corrosion resistance.

special-purpose digital signal processor : special-purpose digital signal processor digital signal processor with special feature for handling a specific signal processing application, such as FFT.

Specialty Steel: Steels such as electrical, alloy or stainless steels. These generally are produced in smaller volumes to meet the specific needs of customers.

Specialty Tube: Refers to a wide variety of high quality custom made tubular products requiring critical tolerances, precise dimensional control and special metallurgical properties. Specialty tubing is used in the manufacture of automotive, construction and agricultural equipment, and in industrial applications such as hydraulic cylinders, machine parts and printing rollers. Because of the range of industrial applications, the market typically follows general economic conditions.

specific absorption rate (SAR) : specific absorption rate (SAR) the deposition of energy over time into a body. The units are generally watts per kilogram of body mass. This is the attribute on which findings by various researchers can be compared and on which the exposure standards base their guidelines.

Specific Conjunctive Test: A conjunctive test using specific values of each of the parameters.

Specific Gravity: The ratio of the weight of any volume of substance to a weight of an equal volume of some substance taken as a standard, usually water for liquids and hydrogen for gas.

specific heat: The quantity of heat required to raise the temperature of unit mass through 1oC.

Specification : The chemical composition and dimensions of products made by the plant. The specifications include all processes required to achieve the finished product.

specification : specification a statement of the design or development requirements to be satisfied by a system or product.

Specific-Gravity (Battery): The weight of the electrolyte compared to the weight of an equal volume of pure water. It is used to measure the strength or percentage of sulfuric acid in the electrolyte.

Specimen: That portion of a sample taken for evaluation of some specific characteristic or property

speckle : speckle (1) grainy light pattern that results when coherent light scatters from a rough surface.(2) granular image

noise due to fluctuations in the number of photons arriving at an image sensor. Speckle often occurs in night-vision equipment and X-ray images. Also called quantum mottle.

speckle pattern : speckle pattern grainy appearance of the intensity of scattered light due to random interference. The grain size is inverse of the illuminated area of the scattering medium in wavelength units.

SPECT : SPECT See single photon emission computed tomography.

Spectograph: An optical instrument for determining the presence or concentration of minor metallic constituents in a material by indicating the presence and intensity of specific wave lengths of radiation when the material is thermally or electrically excited.

Spectograph (X Rays): An instrument using an extended surface a photographic plate or film, or a fluorescent screen for receiving the X ray diffraction pattern.

spectral completeness 1: spectral completeness characteristic of a linear dynamical system whose eigenfunctions connected with eigenvalues form a basis in the state space. Spectral completeness depends on the matrix A_1 . System is spectrally complete if and only if $\text{rank} A_1 = n$

spectral controllability : spectral controllability a linear dynamical system characteristic where every sub-system connected with an eigenvalue is controllable.

spectral density function : spectral density function the Fourier transform of the covariance for a wide-sense stationary process.

spectral domain : spectral domain the transform domain obtained by taking a Fourier transform in order to solve a boundary value problem. This technique is particularly convenient for the analysis of microstrip circuits and antennas.

spectral hole burning : spectral hole burning a technique used to render an absorbing material transparent at select frequencies by bleaching a portion of the (inhomogeneously broadened) absorption spectrum.

spectrometer : spectrometer optical instrument that disperses broadband light into its component wavelengths, allowing the measurement of light intensity at each individual wavelength. Spectrometers may use prisms or gratings for wavelength dispersion and any of a variety of light detectors including photomultiplier tubes or charge-coupled devices.

Spectroradiometers: Spectroradiometers are measurement devices used to determine the amount of light emitted by a device such as a lamp, computer screen or television screen. Spectroradiometers measure light in the visible range, with wavelengths between about 390 and 750 nanometers. The light is measured in terms of spectral power distribution - a measure of power per unit area for each wavelength.

spectroscopy : spectroscopy the measurement of the intensities of wavelength dispersed light to identify a chemical component or measure its concentration.

spectrum : spectrum (1) a range of electromagnetic energy ordered in accordance with their relative periodicity.(2) the magnitude of the Fourier transform of a (deterministic) signal. The word spectrum is also used to refer to the power spectrum of a random process.

spectrum analyzer : spectrum analyzer a test system that measures RF or microwave devices in terms of signal frequency and signal power.

Spectrum management (strategic/operational) . : Planning, coordinating, and managing use of the electromagnetic spectrum through operational, engineering, and administrative procedures with the objective of enabling military electronic systems to perform their functions within intended environments without causing or suffering harmful interference.

Spectrum management allied data exchange format (smadef) . : A common data exchange format for frequency management under development by nato.

spectrum reuse : spectrum reuse reusing frequencies over and over again in a confined area, resulting in more efficient utilization and higher radio network capacity.

spectrum : The plot of amplitude against frequency.

specular intensity : specular intensity the energy reflected from a rough surface in the specular direction. Sometimes called coherent component of the scattered intensity.

specular reflection : specular reflection (1) the process by which a radio wave reflects from an electrically "even" surface experiencing changes only in amplitude, phase, and polarization, comparable to light reflecting from a mirror.(2) the part of an electromagnetic wave that is reflected in the direction specified by Snell's law of reflection.

Specular reflectors: Specular reflectors have mirror like characteristics (the word "specular" is derived from the Greek word meaning mirror). The most common materials used for ballasts, the devices that turn on and operate Fluorescent tubes, are aluminum and silver. Silver has the highest reflectivity; aluminum has the lowest cost. The materials and shape of the reflector are designed to reduce absorption of light within the fixture while delivering light in the desired angular pattern. Adding (or retrofitting) specular reflectors to an existing light fixture is frequently implemented as a conservation measure.

specular scattering : specular scattering See specular reflection .

specular transmittance : specular transmittance the effect on a signal passing through a diffusely transmitting surface such as that the signal scattered in all directions.

speculative execution : speculative execution a CPU instruction execution technique in which instructions are executed without regard to data dependencies. See also lookahead.

Speculative resources (coal): Undiscovered coal in beds that may occur either in known types of deposits in a favorable geologic setting where no discoveries have been made, or in deposits that remain to be recognized. Exploration that confirms

their existence and better defines their quantity and quality would permit their reclassification as identified resources.

Speculative resources (SR): Uranium in addition to that is thought to exist, mostly on the basis of indirect evidence and geological extrapolations, in deposits discoverable with existing exploration techniques. The location of deposits in this category can generally be specified only as being somewhere within given regions or geological trends. The estimates in this category are less reliable than estimates of and . Note corresponds to the combination of DOE's possible potential resources and speculative potential resources categories.

Speculative resources (uranium): Uranium in addition to Estimated Additional Resources (EAR) that is thought to exist, mostly on the basis of indirect evidence and geological extrapolations, in deposits discoverable with existing exploration techniques. The locations of deposits in this category can generally be specified only as being somewhere within given regions or geological trends. The existence and size of such deposits are speculative. The estimates in this category are less reliable than estimates of EAR. SR corresponds to DOE's Possible Potential Resources plus Speculative Potential Resources categories.

speech activity factor : speech activity factor the fraction of time for which a speech signal is nonzero-valued, over a long period of time. Zero-valued speech time segments occur as a result of pauses in the speech process. The speech activity factor is an important concept in the theory of statistical multiplexing of voice signals in a telephone switch. It is also an important concept in the IS-95 CDMA cellular system.

speech analysis : speech analysis process of extracting time-varying parameters from the speech signal that represent a model for speech production.

speech coding : speech coding source coding of a speech signal. That is, the process of representing a speech signal in digital form using as low rate (in terms of, e.g., bits per second) as possible.

speech compression : speech compression the encoding of a speech signal into a digital signal such that the resulting bit rate is small and the original speech signal may be reproduced with as little distortion as possible. The transformation of a coded speech signal into another coded speech signal of lower bit rate in such a way that there is insignificant loss in speech quality of the decoded and play-back signal.

Speech plus. : Technique used to combine voice and data on the same line by assigning the top part of the normal voice bandwidth to data.

speech recognition : speech recognition the process of recognizing speech portions carrying out linguistic information. The recognition can involve phonemes, single and connected words. Because of the crucial role of time, most successful approaches to automatic speech recognition are currently based on HMM (hidden Markov models) that incorporate very naturally the time dimension.

speech recognizer : speech recognizer system for performing speech recognition.

Speech scrambler. : A device by which speech is converted into unintelligible form before transmission and is restored to intelligible form at reception to obtain some measure of privacy against casual overhearing by unauthorized persons.

speech synthesis : speech synthesis the process of turning information into synthesized speech. When the synthesis involves restrictive linguistic domains (e.g., announcements in railway stations), the process often consists simply of playing back speech recorded in EPROM memories using proper coding (e.g., AD-PCM). However, if one makes no restrictions on the information to synthesize, only artificial speech production is possible, which is commonly based on systems that predict phonetic units from linguistic information.

Speed dialling. : Process of using short sequences of digits to represent complete telephone numbers.

speed droop : speed droop a linear characteristic that is provided to governors of two or more units operating in parallel for stable load division in case of load increase.

speed of light: speed of light (1) a scalar constant in vacuum roughly equal to 3×10^8 meters per second.(2) the phase velocity representing the rate of advance of the phase front of a monochromatic light wave.

speed of light: speed of light in vacuum (c_0) = $2.997\ 925 \times 10^8$ m s⁻¹

speed range : speed range the minimum and maximum speeds at which a motor must operate under constant or variable torque load conditions. A 4:1 speed range for a motor with a top speed of 1800 rpm means that the motor must be able to operate as low as 450 rpm and still remain within regulation specifications. The controllable speed range of a motor is limited by the ability to deliver required torque below base speed without additional cooling.

speed regulation : speed regulation the variation of the output speed of an electromechanical device as the load on the shaft is increased from zero to some specified fraction of the full load or rated load. Usually expressed as a percentage of the no-load speed. A large speed regulation is most often considered as a bad regulation from a control point of view.

speed sensor : speed sensor a device used to detect the speed of the rotor of an electric machine. Optical (strobe) and electromagnetic tachometers are commonly used.

speed servo : speed servo a servo where the speed is the controlled parameter. See also servo.

speed-power product : speed-power product an overall performance measurement that is used to compare the various logic families and subfamilies.

speedup factor : speedup factor the ratio of execution time for a problem on a single processor using the best sequential algorithm to the execution time on a multiprocessor using a parallel algorithm under consideration. Provides a performance measure for the parallel algorithm and the multiprocessor.

Spelter (Prime Western Spelter): A low grade of Virgin Zinc containing approximately 98% Zinc used in Galvanizing

processes.

Spent fuel: Irradiated fuel that is permanently discharged from a reactor. Except for possible reprocessing, this fuel must eventually be removed from its temporary storage location at the reactor site and placed in a permanent repository. Spent fuel is typically measured either in metric tons of heavy metal (i.e., only the heavy metal content of the spent fuel is considered) or in metric tons of initial heavy metal (essentially, the initial mass of the fuel before irradiation). The difference between these two quantities is the weight of the fission products.

Spent fuel: Fuel assemblies removed from a reactor after use.

spent fuel : spent fuel irradiated fuel whose fissile component has been reduced such that it is no longer useful as reactor fuel.

Spent fuel disassembly hardware: The skeleton of a fuel assembly after the fuel rods have been removed. Generally, SFD hardware for PWR assemblies includes guide tubes; instrument tubes, top and bottom nozzles; grid spacers; hold-down springs; and attachment components, such as nuts and locking caps. For BWR fuel assemblies, SFD hardware includes the top and bottom tie plates, compression springs for individual fuel rods, grid spacers, and water rods.

Spent liquor: The liquid residue left after an industrial process; can be a component of waste materials used as fuel.

Spheroidizing: Heating and cooling to produce a spheroidal or globular form of carbide in steel. Spheroidizing methods frequently used are: 1. Prolonged holding at a temperature just below Ae_1 . 2. Heating and cooling alternately between temperatures that are just below Ae_1 . 3. Heating to temperature above Ae_1 or Ae_3 and then cooling very slowly in the furnace or holding at a temperature just below Ae_1 . 4. Cooling at a suitable rate from the minimum temperature at which all carbide is dissolved, to prevent the reformation of a carbide network, and then re heating in accordance with methods 1 or 2 above. (Applicable to hypereutectoid steel containing a carbide network.)

Spheroidizing Annealing: A subcritical annealing treatment intended to produce spheroidization of cementite or other carbide phases.

sphere gap: A gap between two spherical electrodes. The sphere gap method of measuring high voltage is the most reliable and is used as the standard for calibration purposes.

sphere gap : sphere gap a spark gap whose electrodes are metal spheres. A sphere gap with carefully-calibrated electrode spacing is used as a measuring instrument for voltages in the kilovolt to megavolt range.

spherical mirror : spherical mirror a mirror in which the reflecting surface is spherical.

spherical wave : spherical wave an electromagnetic wave in which each wavefront (surface of constant phase) forms a sphere and propagates in to-ward or away from the center of the sphere. A uniform spherical wave has the same amplitude over an entire wavefront; a nonuniform spherical wave has varying amplitude.

spherical wrist : spherical wrist a wrist where all of its revolute axes intersect at a single point. Such a wrist is typically thought of as mounted on a three-degree-of-mobility arm of a six-degree-of-mobility manipulator. For manipulators with a spherical wrist it is possible to solve the inverse kinematics from the arm separately from the inverse kinematics for the spherical wrist. This is equivalent to the inverse kinematics problem subdivided into two subproblems, since the solution for the position is decoupled from that for the orientation.

spheroid: Solid figure generated by an ellipse rotating about one of its axes.

Spheroidite: A cementite aggregate of globular carbide and ferrite.

Spheroidized Cementite (Divorced Pearlite): The globular condition of iron carbide after a spheroidizing treatment.

Spheroidized Structure: A microstructure consisting of a matrix containing spheroidal particles of another constituent.

Spheroidizing: A form of annealing consisting of prolonged heating of iron base alloys at a temperature in the neighborhood of, but generally slightly below the critical range, usually followed by a relatively slow cooling. Spheroidizing causes the graphite to assume a spheroidal shape, hence the name.

Spheroidizing Annealing: A subcritical annealing treatment intended to produce spheroidization of cementite or other carbide phases.

SPICE : SPICE a computer simulation program developed by the University of California, Berkeley, in 1975. Versions are available from several companies. The program is particularly advantageous for electronic circuit analysis, since DC, AC, transient, noise, and statistical analysis is possible.

Spiegel: High manganese pig iron, containing 15-30% manganese, approximately 5% carbon, and less than 1% silicon used in the manufacture of steel by the Bessemer, or basic open hearth process.

Spiegeleisen (Spiegel): Alloy of iron and manganese used in basic and acid open hearth steelmaking practice. A high manganese pig iron, usually containing 15% or 20 Mn and 4.5-6.5% C.

spike: A spike involves a sudden marked jump in voltage, which can damage electronics and corrupt or destroy data.

spike (or impulse, switching surge, lightning surge): These terms refer to a voltage increase of very short duration (microsecond to millisecond). Spikes can range in amplitude from 200 V to 6,000 V and are caused by lightning, switching of heavy loads, and short circuits or power system faults.

spike suppressor: A device that provides protection against short duration (microsecond to millisecond) voltage increases known as spikes, impulses, transients, or high-frequency surges.

spike suppressor : spike suppressor any of several devices e.g., metal-oxide varistors that clamp short-duration power line overvoltages to an acceptable level.

Spill Light: Unwanted light directed onto a neighboring property. Also referred to as Light Trespass.

spillover : spillover phenomenon that occurs when radiation from a feed extends past the reflector edges and is not

intercepted by the reflector.

Spillway: A passage for surplus water to flow over or around a dam.

spin coating: spin coating the process of coating a thin layer of resist onto a substrate by pouring a liquid resist onto the substrate and then spinning the substrate to achieve a thin uniform coat.

spin echo : spin echo an oscillating electromagnetic field emitted by a macroscopic orientation of atomic or nuclear spins, generated by reversing the dephasing process in an inhomogeneously broadened material.

spin lock : spin lock a mutual exclusion mechanism where a process spins in an infinite loop waiting for the value of a variable to indicate a resource availability.

Spinning: The procedure of making sheet metal discs into hollow shapes by pressing the metal against a rotating form (spinning chuck) by a tool.

Spinning reserve: That reserve generating capacity running at a zero load and synchronized to the electric system.

spinning reserve: The generating capacity running at no load and synchronized to the electric system and kept as a reserve to meet sudden increases in demand.

spinning reserve: The difference between the total available capacity of all generating sets already coupled to the system and their total actual loading.

Spinning reserve: Utility generating capacity on-line and running at low power in excess of actual load.

spiral computed tomography (CT) : spiral computed tomography (CT) an imaging modality that uses a rotating X-ray source and detector revolving around a continuously moving gantry. As viewed from the gantry, the X-ray source appears to travel in a spiral. A continuous set of projection images is gathered around the spiral and is interpolated to obtain traditional transverse cross-section images. Also known as helical CT.

spiral CT : spiral CT See spiral computed tomography.

spiral inductor : spiral inductor an integrated circuit implementation of a common electrical element that stores magnetic energy. Two extreme behaviors of an inductor are that it will act as a short circuit to low frequency or DC energy, and as an open circuit to energy at a sufficiently high frequency (how high is determined by the inductor value). In an MMIC, a spiral inductor is realized by a rectangular or circular spiral layout of a narrow strip of metal. The value of the inductance increases as the number of turns and total length of the spiral is increased. Large spiral inductors are very commonly used as “bias chokes” to isolate the DC input connection from the RF circuit. Since a large valued inductor essentially looks like an open circuit to high frequency RF/microwave energy, negligible RF/microwave energy will leak through and interact with the DC bias circuitry.

Spiral Test: A method of interpreting the fluidity of an alloy by pouring molten metal into a mold with a long narrow channel. The length of such casting, under standardized conditions, is taken as the fluidity index of that alloy.

Spiral Wrap: A term given to describe the helical wrap of a tape or thread over a core.

Splash Core: A core of tile placed in a mold to prevent erosion of the mold at places where metal impinges with more than normal force. Splash cores are commonly used at the bottom of large rammed pouring basins, at the bottom of long downsprues, or at the ingates of large molds.

Splash-Proof: An open apparatus in which the ventilation openings are so constructed that drops of liquid or solid particles coming toward it at any angle up to 100° downward from vertical cannot enter directly or by running along a surface.

splice : splice a permanent connection between two fibers made by melting or fusing the two fibers together in an electric arc or gas flame. Or they may be held together in a variety of mechanical devices that align the two fiber cores. In fusion splicing, connections can be achieved with losses < 0:1 dB.

spline: spline (1) a continuous function, interpolating a set of data points p_i , that is composed of segments, having p_i and p_{i+1} as extremes. The segments are linked together in such a way that the continuity constraint is satisfied. (2) piecewise polynomial, with a smooth fit between the pieces.

spline wavelet : spline wavelet wavelet that is in the form of a spline.

Split: 1) IMIS action for a smaller produced coil that has been split from a larger consumed coil. 2) (Stripped) The process of unloading any or all coils from stools/bases in the Batch Anneal.

split and merge : split and merge procedure often used in image or signal segmentation. The procedure involves splitting, iteratively applied if needed, the inhomogeneous regions of an image or sections of a discrete signal and followed by merging similar regions or sections is a split and merge.

Split Circuit: A duplex receptacle that can be wired for two separate circuits.

Split Count: Field incremented by one each time a consumed IPM is split into smaller coils which are then assigned individual IPM's.

Split Mesh: A wire mesh grip separated at one row along the wire mesh axis utilizing an additional lace or rods to weave closed around cable.

Split Phase: A split phase electric distribution system is a 3wire singlephase distribution system, commonly used in North America for singlefamily residential and light commercial (up to about 100 kVA) applications. It is the AC equivalent of the former Edison dir

Split system: When applied to electric air-conditioning equipment, it means a two-part system--an indoor unit and an outdoor unit. The indoor unit is an evaporator coil mounted in the indoor circulating air system, and the outdoor unit is an air-cooled condensing unit containing an electric motor-driven compressor, a condenser fan, and a fan motor.

Split tails: Use of one tails assay for transaction of enrichment services and a different tails assay for operation of the enrichment plant. This mode of operations typically increases the use of uranium, which is relatively inexpensive, while decreasing the use of separative work, which is expensive.

split transaction : split transaction a bus transaction (e.g., memory read or write) in which a request and the corresponding response are sent in two different bus transactions.

Split Wind: Tying all of the blowers into one main header to feed wind to more than one furnace.

Split-spectrum cell: A compound photovoltaic device in which sunlight is first divided into spectral regions by optical means. Each region is then directed to a different photovoltaic cell optimized for converting that portion of the spectrum into electricity. Such a device achieves significantly greater overall conversion of incident sunlight into electricity. See 'multijunction device.'

SPM laser : SPM laser See synchronously pumped-modelocked laser.

Spoiling. : The process whereby suitably sited transmitters, operating in a synchronized group, mutually add to the service coverage of radio system, but reduce or nullify the value of the system as a direction-finding navigation aid.

Spongy Casting: A casting in which the metal is porous and dendritic.

Spontaneous combustion, or self-heating, of coal: A naturally occurring process caused by the oxidation of coal. It is most common in low-rank coals and is a potential problem in storing and transporting coal for extended periods. Factors involved in spontaneous combustion include the size of the coal (the smaller sizes are more susceptible), the moisture content, and the sulfur content. Heat buildup in stored coal can degrade the quality of coal, cause it to smolder, and lead to a fire.

spontaneous decay : spontaneous decay process by which an atom or molecule in the absence of outside influence undergoes a transition from one energy state to another lower state.

spontaneous emission : spontaneous emission radiation resulting when an atom or molecule in the absence of outside influence undergoes a transition from one energy state to another lower state. Contrast with stimulated emission.

spontaneous lifetime : spontaneous lifetime coefficient representing the time after which a population of isolated atoms in an excited state may be expected to fall to one over e of its initial value, transition lifetime.

spontaneous light scattering : spontaneous light scattering scattering of light from thermally produced refractive index variations, e.g., spontaneous Brillouin scattering and spontaneous Raman scattering.

spontaneous polarization : spontaneous polarization the internal electrical dipole moment of ferroelectric crystal.

spontaneous pulsations : spontaneous pulsations periodic or chaotic pulsations in the output of a laser oscillator when there is no modulation of the laser excitation or cavity loss.

Spoofing. : In electronic warfare. Creation of false radar targets primarily used for deception. An alternative name for deception.

Spool: A term loosely applied to almost any moving cylindrically shaped part of a hydraulic component, which moves to direct flow through the component.

spool : spool (1) acronym for "simultaneous peripheral operation on-line." Area managed by a process (called a spooler) where data from slow I/O operations are stored in order to allow their temporal overlapping with other operations.(2) a cylindrical ceramic insulator, typically used for secondary conductors in distribution work.

Spoiled Coil: A coil having edges that are turned up (like a spool of thread).

spooling : spooling sending printer output to a secondary storage device, such as a disk, rather than directly to the printer. This is done because disk devices can accept data at a much higher rate than printers.

Sporadic e layer. : Clouds of varying size up to several hundred kilometres across appear in the e layer. These are regions where the electron density is higher than normal for that layer. These occur most frequently during summer nights and give single hop ranges of 2000 km at frequencies of up to 50 mhz. See ionosphere.

Spot: (or Coupon) A round disk of steel cut from the strip used in determining Rockwell hardness and coating weight. The disk has a diameter of 2.52 inches, and an area of 5 square inches.

Spot Check: A coil processed on the plater and sent to the Side Trimmer to check for defects.

Spot market (natural gas): A market in which natural gas is bought and sold for immediate or very near-term delivery, usually for a period of 30 days or less. The transaction does not imply a continuing arrangement between the buyer and the seller. A spot market is more likely to develop at a location with numerous pipeline interconnections, thus allowing for a large number of buyers and sellers. The Henry Hub in southern Louisiana is the best known spot market for natural gas.

Spot market (uranium): Buying and selling of uranium for immediate or very near-term delivery. It typically involves transactions for delivery of up to 500,000 pounds U3O8 within a year of contract execution.

Spot Material: Metal or finished products available for prompt delivery.

Spot price: The price for a one-time open market transaction for near-term delivery of a specific quantity of product at a specific location where the commodity is purchased at current market rates. See also spot market terms associated with specific energy types.

spot price : The price at which the commodity electricity is selling at for immediate delivery at a given time and place.

spot pricing : Determination every half-hour a new price for electricity in a given region of the network. The spot market essentially schedules the cheapest generators that are able to supply the load.

Spot purchases: A single shipment of fuel or volumes of fuel purchased for delivery within 1 year. Spot purchases are often made by a user to fulfill a certain portion of energy requirements, to meet unanticipated energy needs, or to take advantage of low-fuel prices.

spotlight: A (small) projector giving concentrated light of usually not more than 20° divergence.

Spot-market price: See spot price.

Spout: A trough through which the metal flows from the furnace to the ladle.

Spread Spectrum: A wireless communications technology that scatters data transmissions across the available frequency band in pseudorandom pattern. Spreading the data across the frequency spectrum greatly increases the bandwidth which in turn can reduce noise and provide

Spread spectrum multiple access (ssma). : General term for a number of modulation methods such as fhss and cdma which utilise spread spectrum techniques for multiple access on a communications satellite.

spread spectrum. : A communications technique in which the modulated information is transmitted in a bandwidth considerably greater than the frequency bandwidth containing the original information. Spread spectrum systems utilise a sequential noise like signal, for example pseudo noise codes, to spread the normally narrow band information signal over a relatively wide band of frequencies. The receiver correlates these signals to retrieve the original information signal.

Spreader Hooks: Lifting device used by crane to move coils. Consists of a heavy top bar and two manually adjustable arms.

spreading code : spreading code a sequence used for spreading the spectrum of the information signal in a spread-spectrum system, commonly done either by direct multiplication of the faster-varying spreading signal with the data sequence (direct-sequence, DS), or by hopping the carrier-frequency (frequency-hopping, FH). Also known as spreading sequence. See also short code, long code.

spreading gain : spreading gain in a spread-spectrum system, the number of dimensions used for transmitting the signal divided by the number of dimensions actually needed if spreading was not used. This is approximately equal to the ratio between the bandwidth after spreading and the bandwidth before spreading. In a BPSK system, it is equal to the number of chips per bit in a direct sequence system. Also called processing gain.

spread-spectrum multiple-access : spread-spectrum multiple-access a multiple-access system in which each sender transmits their data using a frequency bandwidth significantly greater than the information bandwidth of the signal.

Spring Back: An indicator of elastic stresses, frequently measured as the increase in diameter of a curved strip after removing it from the mandrel about which it was held. The measurement is employed as an indicator of the extent of recovery or relief of residual stresses that has been achieved by the transformation of elastic strain to plastic strain during heating or stress relieving.

Spring Steel Strip: Any of a number of strip steels produced for use in the manufacture of steel springs or where high tensile properties are required marketed in the annealed state, hard rolled or as hardened and tempered strip.

Spring Temper: In brass mill terminology, Spring Temper is eight numbers hard or 60.50% reduction.

Spring Winding Time: For springclosed CB's, the time for the spring to be fully charged after a closing operation.

sprites: Massive but weak luminous flashes that appear directly above an active thunderstorm system and are coincident with cloud-to-ground or intra-cloud lightning strokes. Sprites are immense. They can shoot up from the top of a 8 km thundercloud to heights of 40 km or more.

Sprue Base: An enlargement or rounded section at the bottom of the downsprue, used to help streamline the flow of metal into the runner, lowering the velocity.

Sprue Bottom: A print attached to the top or squeeze board of a mold to make an impression in the cope indicating where the sprue should be cut.

Sprue Cutter: A metal tool used in cutting the pouring aperture, the sprue hole.

Sprue Hole: The opening through which the metal is poured into the cope to run into the casting cavity.

SPT-1: Same as SP-1, except all-thermoplastic. 300V. With or without 3rd conductor for grounding.

SPT-2: Same as SP-2, except all-thermoplastic. 300V. With or without 3rd conductor for grounding.

SPT-3: Same as SP-3, except all-thermoplastic. 300V. With or without 3rd conductor for grounding.

spur : A branch from a ring final circuit.

spur-free dynamic range of Bragg cell: spur-free dynamic range of Bragg cell regime of Bragg cell f_1 C f_2 multifrequency drive condition given by the ratio of the diffracted light intensity at the true frequency spatial/spectral locations f_1 or f_2 to the intensity of the intermodulation products at $2f_1 - f_2$ and $2f_2 - f_1$.

spurious : spurious undesired, nonharmonically related, nonrandom signals or spectral content generated internal to a nonlinear circuit. Generally, spurious signals are created by internal mixing of multiple input signals, by internally generated oscillations, and by combinations thereof.

Sputtering: A physical vapor deposition process where high-energy ions are used to bombard elemental sources of semiconductor material, which eject vapors of atoms that are then deposited in thin layers on a substrate.

Square Mil: The area of a square one mil by one mil.

square wave: A periodic wave which alternates between two fixed amplitudes for equal lengths of time, with the time of transition between the amplitudes being negligibly small.

Square wave inverter: The inverter consists of a DC source, four switches, and the load. The switches are power semiconductors that can carry a large current and withstand a high voltage rating. The switches are turned on and off at a correct sequence, at a certain frequency. The square wave inverter is the simplest and the least expensive to purchase, but it produces the lowest quality of power.

Squareness: Characteristic of having adjacent sides or planes meeting at 90 degrees

square-wave : square-wave a waveform of square shape which is usually periodic with known periodicity. Often used as a

test signal.

square-wave brushless DC motor : square-wave brushless DC motor a permanent magnet brushless DC motor with concentrated stator phase windings. The concentrated windings create a square wave flux distribution across the air gap and a trapezoidal shaped back-EMF.

square-wave inverter : square-wave inverter a self-commutated inverter with a square-wave output. The frequency is set by the switching frequency while the amplitude may be controlled by adjusting the input DC voltage.

Squeeze Board: A board used on the cope half of the mold to permit squeezing of the mold.

Squeeze Head: In certain type of molding machines, a stationary or movable plate against which a filled mold is compressed, in order to complete the compacting of the sand.

squeeze-on : squeeze-on a large crimped connector which requires a special press for installation.

Squeezer Machine: A power operated, usually pneumatic, device used to pack sand into a flask.

sqelch: sqelch to automatically reduce the gain of the audio amplifier of a receiver in order to suppress background noise when no input signal is being received. The circuit performing this function is called the sqelch circuit, and it acts as a controllable receiver input switch to allow reception of strong signals and block the weak and noisy signals.

Squelch : The reduction or elimination of the noise otherwise heard in a radio receiver when no carrier signal is present.

Squirrel Cage Induction Motors: A Squirrel Cage Induction Motor is the most commonly encountered induction motor. It employs a rotor with conductive bars running along its axial length.

squirrel cage rotor: This type of rotor has the simplest and most rugged construction and is almost indestructible. The rotor consists of a cylindrical core with parallel slots for carrying the rotor conductors which are not wires but heavy bars of copper, aluminium or alloys. The rotor bars are permanently short-circuited at the ends to form the winding or cage. About 90% of induction motors are squirrel cage type.

squirrel-cage induction motor : squirrel-cage induction motor an induction motor in which the secondary circuit (on the rotor) consists of bars, short-circuited by end rings. This forms a squirrel cage conductor structure, which is disposed in slots in the rotor core. See also cage-rotor induction motor.

Sr: See Single Reduced.

SR: Silicone rubber control cable. 600V, 125°C

Sr Plate: Single Reduced Plate. This product comes from the Temper Mills and goes to the Tin Mill for processing but does not get any further cold reduction.

SRAM: Static RAM. A RAM that stores information in flip flop cells which do not have to be refreshed unlike those of the DRAM.

SR-AW: Flexible, nickel-plated copper conductor, silicone rubber insulation, glass braid. 600V, 200°C

SR-C: Solid copper conductor, silicone rubber insulation, glass braid. 600V, 125°C

SRD: Portable range or dryer cable. Three or four rubber-insulated conductors with rubber or neoprene jacket, flat or round construction. 300V, 60°C

SRDT: Same as SRD, except all-thermoplastic with a maximum temperature of 90°C.

SR-H: Silicone rubber-insulated, asbestos braid. 500V, 125°C

Sri: See Steel Recycling Institute.

Srl: Single random length line pipe with 17.5% minimum average length

Ssi, small-scale integration : A term used to describe a multi-function semiconductor device with a spare density (10 circuits or less) of electronic circuitry contained on a single silicon chip. (see table following lsi for comparison of circuit density ranges).

ST: Structured Text, one of the IEC 611313 programming languages.

ST: Hard service cord, jacketed, same as type S except all-plastic construction. 600V, 60°C to 105°C

Stability: Ability of a system to maintain control when subject to severe outside disturbances.

Stability: The property of a system or element by virtue of which its output will ultimately attain a steady state. The amount of power that can be transferred from one machine to another following a disturbance. The stability of a power system is its ability to develop restoring forces equal to or greater than the disturbing forces so as to maintain a state of equilibrium.

Stability: The r.m.s. value of the symmetrical component of the through fault current up to which the protection system remains stable.

stability: The property of a system or element by virtue of which its output will ultimately attain a steady state. The stability of a power system is its ability to develop restoring forces equal to or greater than the disturbing forces so as to maintain a state of equilibrium.

Stability: The output state of the photoelectric is either stably ON, unstable, or stably OFF. Unstable outputs cause the system to perform irrationally. Unstable output occurs when the amount of light incident on the receiver is near the trigger level of the device.

Stability: The ability of a transducer to maintain all of its performance specifications throughout its life.

stability : stability (1) the condition of a dynamic or closed-loop control system in which the output or controlled variable always corresponds, at least approximately, to the input or command within a limited range. In most devices, this is a measure of the inherent ability of the circuit to avoid internally generated oscillations. In oscillators, stability denotes the ability of the circuit to maintain a stable internally generated amplitude and frequency. The circuit components, bias, loading, drive and en-

environmental conditions, and possible variations therein, must be accounted for. See also Linville stability factor and Rollett stability factor.(2) in electronic drives, the ability of a drive to operate a motor at constant speed (under varying load), without hunting (alternately speeding up and slowing down). It is related to both the characteristics of the load being driven and electrical time constants in the drive regulator circuits.

Stability (electric): The ability of an electric system to maintain a state of equilibrium during normal and abnormal conditions or disturbances. NERC definition

stability circles : stability circles plotted on the Smith chart that graphically indicate the regions of instability for an RF device.

stability criteria : stability criteria boundaries on regions of stable and unstable behavior in laser parameter space.

stability factors : stability factors two factors, K and B1, that specify the necessary and sufficient conditions for a linear circuit or device to be conditionally or unconditionally stable when the input and output ports are terminated in arbitrary impedances. For unconditional stability, factors K must be greater than unity, and B1 must simultaneously be greater than 0.

stability limit : stability limit the maximum power flow possible through a point in a power system if the system is to remain stable. See transient stability, steady-state stability.

Stability Limits of a Protection System: The quantity whereby a protection system remains inoperative under all conditions other than those for which it is specifically designed to operate.

Stability of Transducer: The ability of a transducer to keep its performance characteristics unchanged during a specified time, all conditions remaining constant.

stability study : stability study the determination of conditions which will cause a power system to become unstable so that these conditions can be avoided or corrected.

Stability : The ability of a device to maintain its performance characteristics over a specified period of time.

stabilizability : stabilizability the property of a system concerning the existence of a stabilizing state feedback or output feedback control. For linear systems, it is characterized as the controllability (see the definition) of all the unstable modes.

Stabilization: A term applied to a number of processes: a) A type of heat treatment to relieve internal stresses. b) The retarding or prevention of a particular reaction by the addition of a stabilizing element. c) a thermal and/or mechanical treatment given to magnetic material in order to increase the permanency of its magnetic properties or condition.

Stabilization lagoon: A shallow artificial pond used for the treatment of wastewater. Treatment includes removal of solid material through sedimentation, the decomposition of organic material by bacteria, and the removal of nutrients by algae.

Stabilizing Anneal: A treatment applied to austenitic stainless steels that contain titanium or columbium. This treatment consists of heating to a temperature below that of a full anneal in order to precipitate the maximum amount of carbon as titanium carbide or columbium carbide. This eliminates precipitation at lower temperatures, which might reduce the resistance of the steel to corrosion.

Stable: Incapable of spontaneous radioactive decay.

stable : stable a system characteristic in which the transients all decay to zero in finite time is said to be stable. If any transient term grows with time, then the system is unstable. If the transient persists, then the system is marginally stable. (An oscillator is a common example of marginal stability.) Much of control engineering theory deals with the problem of classifying closed-loop systems into those that are stable and those that are unstable, with marginally stable systems defining the boundary between the two.

stable equilibrium : stable equilibrium an equilibrium point (see the definition) such that all solutions that start "sufficiently close," stay "close" in time. If the point is not stable, it is called unstable.

stable system: A system is stable when all the poles (roots of the denominator) of its transfer function $H(s)$ lie in the left half of the s plane.

stable system : stable system a system is stable if the output of the system is bounded for all bounded inputs. See also bounded-input bounded-output stability.

Stabilizing Treatment: Any treatment intended to stabilize the structure of an alloy of the dimensions of a part. (1) Heating austenitic stainless steels that contain titanium, columbium, or tantalum to a suitable temperature below that of a full anneal in order to inactivate the maximum amount of carbon by precipitation as a carbide of titanium, columbium, or tantalum. (2) Transforming retained austenite in parts made from tool steel. (3) Precipitating a constituent from a nonferrous solid solution to improve the workability, to decrease the tendency of certain alloys to age harden at room temperature, or to obtain dimensional stability.

Stack: 1) A component of a hydraulic system that runs an individual function of that system. 2) The boiler exhaust pipe. Each stack is equipped with a stack cap for isolating the boiler from atmosphere and two butterflies for directing the gases to either A & B and C & D scrubbers.

Stack: A tall, vertical structure containing one or more flues used to discharge products of combustion to the atmosphere.

stack : stack a hardware or software data structure in which items are stored in a last-in-first-out manner, similar to a cafeteria plate dispenser.

stack algorithm : stack algorithm a sequential decoding algorithm for the decoding of convolutional codes, proposed by Zigangirov in 1966.

stack architecture : stack architecture See zero-address computer.

stack machine : stack machine See zero-address computer.

stack pointer : stack pointer a register in a processor that holds the address of the top of the stack memory location. The address varies as information is stored on or retrieved from the stack; it always points to the top of the stack.

stack program concept : stack program concept a class of CPU or data structure in which items are stored in a last-in-first-out manner, similar to a cafeteria plate dispenser.

Stack Test: A full width sample of chem treated steel saved for metallurgical testing.

stacked microstrip antenna : stacked microstrip antenna a microstrip patch configuration where two or more patches are stacked on top of each other separated by one or more dielectric layers. Typically, the lower patch is fed directly and the upper patch is electromagnetically coupled to the lower patch. This arrangement results in improved bandwidth compared to that of a single layer microstrip patch antenna.

Stackelberg equilibrium : Stackelberg equilibrium a hierarchical equilibrium solution in non-zero-sum games in which one of the players has the ability to force his strategy on the other players. The player who holds the powerful position is called the leader, while the other players who react to the leader's strategy are called the followers. In the case of multiperson games, there exists a variety of possible multilevel decision making structures with many leaders and followers. Thus, the definition of the Stackelberg equilibrium is uniquely and clearly set only for two-person decision problems, but it could be adopted for any given hierarchical structure. If J_1 ; J_2 denote cost functions of leader and the follower, respectively, and d_1 ; d_2 their admissible strategies, then the set $R.d_1$ / defined as: f_d (admissible for the follower); $J_2.d_1$; $d / J_2.d_1$; $d_2 /$ for each admissible d_2 is called the optimal response or rational reaction set of the follower. Then a strategy d_1 is a Stackelberg strategy for the leader if for all admissible d_1 . J_1 is the Stackelberg cost of the leader and any $d_2 \in R.d_1 /$ is an optimal strategy for the follower that is in equilibrium with d_1 . The pair $.d_1 ; d_2 /$ is a Stackelberg solution and corresponding values of the cost functions give the Stackelberg equilibrium outcome. The Stackelberg outcome of the leader may be lower than his Stackelberg cost. If the rational reaction set of the follower is a singleton, then they are equal and they are not worse than the outcome that could be achieved by the leader in the Nash equilibrium if it exists. See also Nash equilibrium.

Stackelberg game : Stackelberg game See Stackelberg equilibrium.

stacking factor : stacking factor a design factor for the core of an electromagnetic device that accounts for the effects of the insulating material on the surface of laminations. The stacking factor gives the percentage of cross-sectional area of the core that is actually ferromagnetic material. Usually expressed as the ratio of the thickness of the laminations without the coating to the thickness with the coating.

Staebler-Wronski effect: The tendency of amorphous silicon photovoltaic devices to lose efficiency upon initial exposure to light; named for Dr. David Staebler and Dr. Christopher Wronski; work performed at RCA.

Stage 3 Emergency: In the state of California, if power reserves ever fall below 1.5 percent, CalISO, the independent system operator in California, will declare a Stage 3 emergency and the state's investor-owned utilities, may be ordered to immediately reduce the demand f

Stagger Wind: Uneven winding of coil on delivery end; used for shearplate.

Stagger Wrap: Offsetting the laps and wrap of a coil by turning the askania handle so that the coil does not wrap straight.

Staging Area: A small (3 20 coil) area of floor space, usually at the delivery end or the entry end of an operating unit. These are areas where inventory is being loaded on or removed from an operating unit.

Stain: A defect on the plate causing a discoloration of the plate.

Stainless Steel Pipe: A pipe is a long tube or hollow cylinder use to move fluid or gaseous substances. The term pipe is often used in reference to metal components, whereas the term tube is more often associated with flexible material such as braided metal or plastics. Stainless steel is one of many different materials used for pipe construction and is characterized by high strength and corrosion resistance.

Stall: Term used to indicate that the line has tension on it, but is not moving.

stall : stall a pause in processing instructions in a pipeline, usually caused by a data dependency or resource conflict. Instructions in the pipeline before the condition causing the stall are prevented from proceeding through the pipeline.

Stamping : A term used to refer to various press forming operations in coining, embossing, blanking, and pressing.

Stand: 1) A component of a hydraulic system, which is made up of a number of stacks. 2) Sets of rolls; Both Temper Mills consist of two stands. Some are four rolls; two backup rolls and two work rolls. Some are work rolls only.

Stand-alone (Photovoltaic): An autonomous or hybrid photovoltaic system not connected to a grid. May or may not have storage, but most stand-alone systems require batteries or some other form of storage.

Stand-alone generator: A power source/generator that operates independently of or is not connected to an electric transmission and distribution network; used to meet a load(s) physically close to the generator.

standard additive model (SAM) jjjj: standard additive model (SAM) a fuzzy system that stores IF-THEN rules that approximate a function $F V X ! Y$. In a simple SAM, the rules may have the form "IF $x \in D A_j$ THEN $y \in D B_j$," where $x \in X$, $y \in Y$, and A_j , B_j are fuzzy sets. The SAM then computes the output $F .x /$ given the input x using a centroidal defuzzifier. An example of a centroidal defuzzifier is where a_j is a membership function of the fuzzy set A_j and c_j is the centroid of the fuzzy set B_j . The term SAM was coined by B. Kosko. See also fuzzy system.

standard array decoding : standard array decoding during decoding of a forward error correction code, the process of associating an error pattern with each syndrome by way of a look-up table.

Standard calibration: The nominal point at which a measurement device is adjusted.

standard cell: A specially prepared primary cell which is characterized by a highly constant emf over long periods of time.

standard cell : standard cell an element of a standard cell library designed using rules from the targeted wafer fabricator. Standard cells are usually designed to be of constant height and variable width with interconnection points located along the bottom and possibly the top of the cell. This is done to facilitate use of an auto-place-and-route program.

Standard contract: The agreement between the Department of Energy (DOE) and the owners or generators of spent nuclear fuel and high-level radioactive waste, under which DOE will make available nuclear waste disposal services to those owners and generators.

Standard Cost Code: 1.) Accounting field connected to unit standards for doing specific products; will vary by unit. 2) Code entered into IMIS to identify the incoming product and to identify the process applied to the product by the side trimmer.

Standard Deviation: A statistical quantity used to describe the variation of a measurable attribute about some average value.

Standard fluorescent: A light bulb made of a glass tube coated on the inside with fluorescent material, which produces light by passing electricity through mercury vapor causing the fluorescent coating to glow or fluoresce.

Standard frequency action format (sfaf). : A common data exchange format for frequency management developed and implemented by the United States.

Standard Gold: A legally adopted alloy for coinage of gold. In the United States the alloy contains 10% Cu.

Standard Industrial Classification (SIC): Replaced with North American Industry Classification System. See NAICS.

Standard Pattern: A pattern of high grade material and workmanship in daily use or at frequent intervals. A pattern used as a master to make or check production patterns.

Standard reporting conditions (SRC): A fixed set of conditions (including meteorological) to which the electrical performance data of a photovoltaic module are translated from the set of actual test conditions. [ASTM E 1036]

Standard Samples: A sample of known composition used to calibrate an instrument or method of analysis.

Standard Shapes: Refractory units stocked by manufacturers or made from stock molds.

Standard Target: An object used to determine sensing range. This is normally a square mild steel plate 1mm thick with the length of each side equal to the diameter of the sensing face or 3 times the nominal sensing distance of the sensor.

Standard test conditions (STC): Conditions under which a module is typically tested in a laboratory (1) Irradiance intensity of 1000 W/square meter (0.645 watts per square inch), AM1.5 solar reference spectrum, and (3) a cell (module) temperature of 25 degrees C, plus or minus 2 degrees C (77 degrees F, plus or minus 3.6 degrees F). [IEC 1215]

Standardize: Act of recalibrating the x ray gauge equipment.

Standardized: For a lockout or tagout device to be standardized they must all be similar in at least one of the following ways color, shape, size. Additionally, in the case of tagout devices, print and format should also be similar.

Standby charge: A charge for the potential use of a utility service, usually done by an agreement with another electric utility service. These services include system backup support and other running and quick-start capabilities.

Standby electricity generation: Involves use of generators during times of high demand on utilities to avoid extra "peak-demand" charges.

Standby facility: A facility that supports a utility system and is generally running under no-load. It is available to replace or supplement a facility normally in service.

Standby heat loss: A term used to describe heat energy lost from a water heater tank.

standby power supply: The power supply that is available to furnish electric power when the normal power supply is not available.

Standby service: Support service that is available as needed to supplement a customer, a utility system, or another utility if a schedule or an agreement authorizes the transaction. The service is not regularly used.

standing wave : standing wave (1) the phenomenon where waves propagating in opposite directions interfere and result in diminished, or eliminated, energy transfer.(2) class of laser resonators (often having only two mirrors) in which the right and left waves are largely overlapping.

standing wave effect : standing wave effect caused by standing waves of light intensity in the resist, this is horizontal, periodic ridges formed along the sides of a resist profile.

standing wave pattern : standing wave pattern a pattern of the envelope of the wave resulting from interference of two same-frequency waves travelling in opposite directions.



standing wave ratio (SWR) : standing wave ratio (SWR) the ratio of the magnitudes of the incident to reflected signal levels for a traveling wave. The SWR has a value between one and infinity inclusive.

standing-wave laser : standing-wave laser a class of lasers (often having only two mirrors) in which the right and left waves are largely overlapping.

standing-wave resonator : standing-wave resonator superposition of equal amplitude right and left travelling waves. One of a class of laser resonators (often having only two mirrors) in which the right and left waves are largely overlapping. Also called a Fabry-Perot resonator.

Stand-off mounting: Technique for mounting a photovoltaic array on a sloped roof, which involves mounting the modules a short distance above the pitched roof and tilting them to the optimum angle.

standstill frequency response test : standstill frequency response test a test in which the rotor of a machine is held fixed, and the appropriate windings are energized over a frequency range large enough to determine machine parameters.

star connection: A method of connecting three elements of a three-phase electrical system at a common node, and with the three phases being taken from the remaining nodes of the elements. This is also known as a  wye  connection.

star network : star network a network topology where a central node broadcasts radially to all sub-scribers. The central node is a vulnerable element on which the whole network depends.

Star Wiring: Called Star Topology and Home Run, a method of cabling each telecommunications outlet directly to the horizontal cross-connect in the telecommunications closet with an individual pair of cables.

Star : (in lan technology) a network topology where the central control point is connected individually to all stations.

Stark broadening : Stark broadening inhomogeneous spectral broadening of a transition in a laser medium due to Stark shifts that vary among the laser atoms or molecules in the medium.

start bit : start bit the first bit (low) transmitted in an asynchronous serial transmission to indicate the beginning of the transmission.

Start bit : (in asynchronous transmission) the first bit used to indicate the beginning of a character; normally, a space condition which serves to prepare the receiving equipment for the reception and registration of the character.

Start Up: The first turn after the line has been down.

Starter: A device used in conjunction with a ballast for the purpose of starting an electric discharge lamp.

starter: A device to assist in the starting process.

Starting Current: Current required by the ballast during initial arc tube ignition. Current changes as lamp reaches normal operating light level.

Starting Heat: Heat cycle setting on the welder for the start of the weld.

Starting Relay: A unit relay which responds to abnormal conditions and initiates the operation of other elements of the protection system.

Starting Torque: The amount of torque the motor produces when it is energized at full voltage and with the shaft locked in place. This value is frequently expressed as "locked rotor torque." It is the amount of torque available when power is applied to break the load away and start accelerating it up to speed.

starting torque : starting torque the torque at zero speed obtained at the very beginning of the starting process of an electrical machine. The condition to obtain the rotation of the rotor is that the starting torque has to be greater than the load torque at zero speed.

Start-stop system : A telegraph system in which each group of code elements corresponding to an alphabetical signal is preceded by a start signal which serves to prepare the receiving mechanism for the reception and registration of a character, and is followed by a stop signal which serves to bring the receiving mechanism to rest in preparation for the reception of the next character.

Start-stop transmission : Asynchronous transmission such that a group of signals representing a character is preceded by a start bit and followed by a stop bit.

Startup test phase of nuclear power plant: A nuclear power plant that has been licensed by the Nuclear Regulatory Commission to operate but is still in the initial testing phase, during which the production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer and places it in commercial operation status. A request is then submitted to the appropriate utility rate commission to include the power plant in the rate base calculation.

Startup/flame stabilization fuel: Any fuel used to initiate or sustain combustion or used to stabilize the height of flames once combustion is underway.

Starvation: Non uniform coating application which results in absence of coating in certain areas.

starvation : starvation a condition when a process is indefinitely denied access to a resource while other processes are granted such access.

Starved Cell (Battery): A cell containing little or no free fluid electrolyte solution. This enables gasses to reach electrode surfaces readily, and permits relative high rates of recombination.

STATCOM: A particular type of Static Var Compensator, in which Power Electronic Devices such as GTO's are used to generate the reactive power required, rather than capacitors and inductors.

State: One of the 50 States, including adjacent outer continental shelf areas, or the District of Columbia.

state : state a set of data, the values of which at any time t , together with the input to the system at the time, determine uniquely the value of any network variable at the time t .

state automaton : state automaton See finite state machine .

state diagram : state diagram (1) a form of diagram showing the conditions (states) that can exist in a logic system and what signals are required to go from one state to another state.(2) a simple diagram representing the input-output relationship and all possible states of a convolutional encoder together with the possible transitions from one state to another. Distance properties and error rate performance can be derived from the state diagram.

state equations : state equations equations formed by the state equation and the output equation.

state feedback : state feedback the scheme whereby the control signal is generated by feeding back the state variables through the control gains.

state machine : state machine a software or hardware structure that can be in one of a finite collection of states. Used to control a process by stepping from state to state as a function of its inputs. See also finite state machine .

State of Charge (Battery): The available amp-hours in a battery at any point of time. State of Charge is determined by the amount of sulfuric acid remaining in the electrolyte at the time of testing or by the stabilized open circuit voltage.

State of charge (SOC): The available capacity remaining in the battery, expressed as a percentage of the rated capacity.

State permit/license/mine number: Code assigned to a mining operation by the state in which the operation is located.

State severance taxes: Any severance, production, or similar tax, fee, or other levy imposed on the production of crude oil, natural gas, or coal by any State, local government acting under authority of State law, or by an Indian tribe recognized as eligible for services by the Secretary of the Interior.

state space conditional codec j: state space conditional codec an approach where the number of codes is much less than with conditional coding. The pre-vious $N - 1$ pixels are used to determine the state s_j . Then the j th variable word-length is used to code the value.

state space variable : state space variable the internal variable (or state) in a state space model description of a dynamic process. These internal variables effectively define the status or energy locked up in the system at any given instant in time and hence influence its behavior for future time.

state transition diagram : state transition diagram a component of the essential model; it describes event-response behaviors.

state variable : state variable one of a set of variables that completely determine the system's status in the following sense: if all the state variables are known at some time t_0 , then the values of the state variables at any time $t_1 > t_0$ can be determined uniquely provided the system input is known for. The vector whose components are state variables is called the state vector. The state space is the vector space whose elements are state vectors.

state-space averaging model : state-space averaging model a small-signal dynamic modeling method for PWM switching circuits. The circuit is viewed as two linear subcircuits, one with the switch on and one with the switch off. A duty-ratio weighted average of the state-space equations for the two subcircuits is then linearized and used to obtain the small-signal transfer function for the switching circuit.

Static Behaviour: Describes how a control system, or an individual unit, carries on under fixed conditions (As contrasted to dynamic behaviour, which refers to behaviour under changing conditions).

Static electricity: A stationary electrical charge on an object.

static excitation system : static excitation system an excitation system derived from solid state devices such as thyristors that convert the AC terminal voltage to DC before application to the rotor.

static induction thyristor (SITH) : static induction thyristor (SITH) a self-controlled power device with high switching frequency. The structure is similar to the static induction transistor (SIT) (hence, not really a thyristor), but has an additional p-layer added to the anode side. It is a normally-on device with the n-region saturated with a minority carrier. The device does not have reverse blocking capability.

static induction transistor (SIT) : static induction transistor (SIT) a high-power, high-frequency device that is essentially a solid-state version of the triode vacuum tube. It is a normally-on device, and a negative gate voltage holds it off. The current ratings of the SIT can be up to 300 A, 1200 V, and the switching frequency can be as high as 100 kHz.

Static IP address: See IP address.

static prediction : static prediction a method of branch prediction that relies on the compiler selecting one of the two alternative instructions for after the branch instruction (either the next instruction or that at the target location specified in the branch instruction). A bit is provided in the branch instruction, which is set to a 0 for one alternative and 1 for the other alternative. The processor then follows this advice when it executes the branch instruction.

static random access memory (SRAM) : static random access memory (SRAM) random access memory that, unlike dynamic RAM, retains its data without the need to be constantly refreshed.

Static Relay: An electrical relay in which the designed response is developed by electronic, magnetic, optical or other components without mechanical motion. Excludes relays using digital technology.

Static Var Compensator: A device that supplies or consumes reactive power comprised solely of static equipment. It is shuntconnected on transmission lines to provide reactive power compensation.

static var compensator : static var compensator a device for fast reactive compensation, either inductive or capacitive, brought about by thyristor-based control of an effective shunt susceptance. It is typically used to regulate voltage at a bus on the high voltage transmission system.

Static Wire: A wire placed above the phase wires of a distribution of transmission circuit to protect against lightning. It is normally galvanized or aluminized steel.

Station (electric): A plant containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or nuclear energy into electric energy.

station battery : station battery a battery used to provide operating energy for the protective relay operations and to initiate circuit breaker operations in a generating station. The battery is necessary, as the equipment must work reliably during severe voltage sags and outages on the AC system.

station control error : station control error in economic dispatch studies, the difference between the desired generation of all plants in a control area and the actual generation of those plants.

station insulator : station insulator refers to a large-sized insulator used in substations.

Station serial number (ssn) . : See number, station serial.

Station Tie: Name of the transformer in the power house that ties the 23KV bus in the power house with the 6.9 KV bus that is called the 'Synchronizing Bus'.

Station use: Energy that is used to operate an electric generating plant. It includes energy consumed for plant lighting, power,

and auxiliary facilities, regardless of whether the energy is produced at the plant or comes from another source.

station, aeronautical (fa). : A land station in the aeronautical mobile service carrying on a service with aircraft stations. In certain instances an aeronautical station may be placed onboard a ship.

Station, aeronautical broadcast (fab). : An aeronautical station which makes broadcasts of meteorological information and notices to airmen.

Station, aeronautical fixed (ax). : A station in the aeronautical fixed service.

Station, aeronautical marker beacon (rla). : A radionavigation land station in the aeronautical radionavigation service which provides a signal to designate a small area above the station. In certain instances an aeronautical marker beacon station may be placed onboard a ship.

Station, aeronautical radio beacon (rlb). : A radionavigation land station in the aeronautical radionavigation service, the emissions of which are intended to enable aircraft, or other mobile service, to determine its bearing or its direction in relation to the aeronautical radio beacon station.

Station, aircraft (ma). : A mobile station installed onboard any type of aircraft and continuously subject to human control.

Station, airdrome control (fac). : An aeronautical station providing communication between airdrome control tower and aircraft.

Station, altimeter (roa). : A radionavigation mobile station in the aeronautical radionavigation service, the emissions of which are intended to determine the altitude of aircraft, aboard which the altimeter station is located, above the earth's surface.

Station, amateur. : A station in the amateur service.

Station, base (fb). : A land station in the land mobile service carrying on a service with land mobile stations. A base station may secondarily communicate with other base stations incident to communication with land mobile stations.

Station, broadcasting (bc). : A station in the broadcasting service.

Station, coast (fc). : A land station in the maritime mobile service carrying on a service with ship stations. A coast station may secondarily communicate with other coast stations incident to communication with ship stations.

Station, experimental (ex). : A station utilizing electromagnetic waves between 10 mhz and 3,000,000 mhz in experiments with a view to the development of science or technique. This definition does not include amateur stations.

Station, flight test (fat). : An aeronautical station used for the transmission of essential communications in connection with the test of aircraft or major components of aircraft.

Station, glide path/slope (rlg). : A radionavigation land station in the aeronautical radionavigation service which provides vertical guidance in connection with an instrument landing system. In certain instances a glide path/slope station may be placed onboard a ship.

Station, hydrological and meteorological fixed (fxh). : A fixed station, the emissions of which are used for the automatic transmission of either hydrological or meteorological data, or both.

Station, hydrological and meteorological mobile (moh). : A mobile station, the emissions of which are used for the automatic transmission of either hydrological or meteorological data, or both.

Station, international broadcasting (bci). : A broadcasting station employing frequencies allocated to the broadcasting service, the transmissions of which are intended to be received directly by the general public in foreign countries.

Station, land (fl). : A station in the mobile service not intended for operation while in motion. A land station may communicate, on a secondary basis, with fixed stations or other land stations of the same category.

Station, land mobile (ml). : A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent.

Station, localizer (rll). : A radionavigation land station in the aeronautical radionavigation service which provides signals for the lateral guidance of aircraft with respect to a runway centre line.

Station, loran (rln). : A long distance radionavigation land station transmitting synchronized pulses. Hyperbolic lines of position are determined by the measurement of the difference in the time of arrival of these pulses.

Station, marine broadcast (fcb). : A coast station, which makes scheduled broadcasts of time, meteorological and hydrographic information.

Station, marine radio beacon (rlm). : A radionavigation land station, the emissions of which are intended to enable a ship's station to determine its bearing or its direction in relation to the marine radio beacon station.

Station, meteorological radar (wxrd). : A station in the meteorological aid service employing radar.

station, mobile (mo). : A station in the mobile service intended to be used while in motion or during halts at unspecified points.

Station, omnidirectional range (rlo). : A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearings of that station from an aircraft.

Station, racon (rlc). : A radionavigation land station which employs a racon. In certain instances a racon may be placed onboard a ship or aircraft. See also racon.

Station, radio beacon. : A radionavigation station, the emissions of which are intended to enable a mobile station to determine its bearing or its direction in relation to the radio beacon station.

Station, radio direction-finding (rg). : A radiolocation station intended to determine only the direction of other stations by means of transmission from the latter.

Station, radio positioning land (pl). : A station in the radiolocation service other than radionavigation station not intended for operation while in motion.

Station, radio positioning mobile (pm). : A station in the radiolocation service other than a radionavigation station intended to be used while in motion or during halts at unspecified points.

Station, radio range (rlr). : A radionavigation land station in the aeronautical radionavigation service providing radio equisignal zones. In certain instances a radio range station may be placed onboard a ship.

Station, radiolocation. : A station in the radiolocation service.

Station, radionavigation land (rl). : A station in the radionavigation service intended to be used while in motion or during halts at unspecified points.

Station, radionavigation. : A station in the radionavigation service.

Station, radiosonde (wxr). : A station in the meteorological air service employing radiosonde.

Station, ship (ms). : A mobile station in the maritime mobile service located onboard a vessel which is not permanently moored.

Station, standard frequency (ss). : A station in the standard frequency service.

Station, surveillance radar (rls). : A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range. In certain instances a surveillance radar station may be placed onboard a ship.

station, telemetering fixed (fxe). : A fixed station, the emissions of which are used for telemetering.

Station, telemetering mobile (moe). : A mobile station, the emissions of which are used for telemetering.

Station, transfer. : A designated relay station of one network that is connected to a designated relay in another network for the purpose of transferring traffic between the networks.

Station, tributary.: See tributary station (message relay).

stationarity interval : stationarity interval the interval of either time (temporal stationarity interval) or space (spatial stationarity interval) over which the conditions required for a WSSUS approximation is valid. That is, the stationarity interval is the period of time or spatial separation over which the scattering function of the channel, and consequently also the delay and Doppler power spectra, stays fixed. This requires that the significant scatterers should remain the same.

stationary equipment: Electrical equipment which is either fixed, or equipment having a mass exceeding 18 kg and not provided with a carrying handle.

stationary reference frame : stationary reference frame a two-dimensional space that is fixed (nonrotational). In electric machines/power system analysis, an orthogonal coordinate axis is established in this space upon which fictitious windings are placed. A linear transformation is derived in which the physical variables of the system (voltage, current, flux) are referred to variables of the fictitious windings.

statistical impulse voltage: This is the switching or lightning overvoltage applied to equipment as a result of an event of one specific type on the system (line energising, reclosing, fault occurrence, lightning discharge, etc), the peak value of which has a 2% probability of being exceeded.

statistical impulse withstand voltage: This is the peak value of a switching or lightning impulse test voltage at which insulation exhibits, under the specified conditions, a 90% probability of withstand. In practice, there is no 100% probability of withstand voltage. Thus the value chosen is that which has a 10% probability of breakdown.

statistical multiplexing : statistical multiplexing multiplexing of a number of variable bit rate (VBR) sources. A result of statistical multiplexing is that for a sufficiently large number of VBR sources, the aggregate bit rate is less than the sum of the peak bit rates of the individual sources.

statistical pattern recognition : statistical pattern recognition methods for carrying out the recognition of patterns on the basis of statistical analysis. These methods are typically based on the learning of unknown pattern probability distributions from examples.

statistical quality control : statistical quality control methods of quality improvement based on statistical techniques. The main idea is to use statistical methods for identification of unusual variations of the controlled process and to pinpoint the causes of such variations. By collecting data at every stage of the production process and statistical analysis of those data (See control chart), the process is maintained in a state of statistical control. The main difference between the statistical quality control and quality inspection is that the latter enables only quality control while the former leads to quality improvement. This in turn results in increased productivity.

statistical spectral compression : statistical spectral compression a common approach to compression used in picture coding. In this approach, the statistical redundancy of the image is exploited and the compression is also obtained by coding the spectral components of the transformed image.

Stator: The electromagnetic part of a motor or generator that does not rotate.

stator: The stationary member of a machine in the form of a hollow cylinder inside which the rotor will be placed with a narrow intervening air gap.

stator : stator the portion of a motor that includes and supports the stationary active parts. The stator includes the stationary portions of the magnetic circuit and the associated windings and leads.

status callback : status callback a request made by a consumer for the utility to give them a phone call which indicates the change of status of their service request. An example of this would be calling the consumer once a crew has arrived on the scene of an outage or has located the root cause of an outage.

status register : status register a register in a processor that holds the status of flags; individual bits in the register represent

flag status.

Stave Construction: Attaching staves to polygonshaped heads in the building of cylindrical bodies; also, standard method used in making semicircular core boxes.

STC: Short Time Current rating of a CT.

steady state response: Behaviour of a circuit after a long time when steady conditions have been reached after an external excitation.

steady-state control : steady-state control operation and mechanisms of the control system in which the main objective is to keep the controlled process in the condition where the state variables relevant to the controlled process performance are constant — i.e., to keep the process in a required operating point. Steady-state control structure may be composed of several control layers, including direct regulatory layer, optimization layer and, eventually, other layers; steady-state control is widely used in chemical and power industries.

steady-state error : steady-state error the difference between the desired reference signal and the actual signal in steady state, i.e., when time approaches infinity.

steady-state gain : steady-state gain the gain that a system applies to DC (constant) input signals.

steady-state response : steady-state response in network analysis, a condition that the response reaches a constant value with respect to the independent variable. In control system studies, it is more usual to define steady state as the fixed response at infinity with respect to the fixed input under the stable circumstances.

steady-state stability : steady-state stability a power system is steady-state stable if it reaches another steady-state operating point after a small disturbance. See dynamic stability.

Steam: Water in vapor form; used as the working fluid in steam turbines and heating systems. Also see District heat .

Steam (purchased): Steam, purchased for use by a refinery, that was not generated from within the refinery complex.

Steam Blowing Process: A process that puts water droplets on steel leaving the galvanizing pot to suppress spangle formation. See Minimized Spangle and Spangle Free.

Steam boiler: A type of furnace in which fuel is burned and the heat is used to produce steam.

Steam Chest: The inside of the turbine housing.

Steam coal: refers to coal used in boilers to generate steam to produce electricity or for other purposes.

Steam coal: Coal burned, primarily in boilers, to generate steam for the production of electricity or for process heating purposes, or used as a direct source of process heat. Steam coal, also known as thermal coal, refers to all coal not classified as coking (or metallurgical) coal. See coal grade.

Steam Demand: The necessary amount of steam generation required at any point in time to satisfy the power house, turbo blowers, and any additional needs of the steel making process.

Steam electric power plant (conventional): A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Steam expenses: The cost of labor, materials, fuel, and other expenses incurred in production of steam for electric generation.

Steam Flow: The measured amount of steam generated by the boiler at any given time, expressed in thousands of pounds per hour.

Steam for heating/cooling: Steam produced at a combined heat and power plant for the purpose of heating and/or cooling space, such as district heating systems.

Steam from other sources: Steam purchased, transferred from another department of the utility, or acquired from others under a joint-facility operating agreement.

Steam Hammer: A type of drop hammer where the ram is raised for each stroke by a double action steam cylinder and the energy delivered to the workpiece is supplied by the velocity and weight of the ram and attached upper die driven downward by steam pressure. Energy delivered during each stroke may be varied.

Steam Header Line: High pressure line which connects the boiler to the power house manifold and through which the steam is delivered.

Steam Header Valve: Electrically or manually operated stop valve located in line on the steam header line used to isolate a boiler off the system when needed.

Steam or hot water radiators or baseboards: A distribution system where steam or hot water circulates through cast-iron radiators or base boards. Some other types of equipment in the building may be used to produce the steam or hot water or it may enter the building already heated as part of a district hot water system. Hot water does not include domestic hot water used for cooking and cleaning.

Steam or hot-water system: Either of two types of a central space-heating system that supplies steam or hot water to radiators, convectors, or pipes. The more common type supplies either steam or hot water to conventional radiators, baseboard radiators, convectors, heating pipes embedded in the walls or ceilings, or heating coils or equipment that are part of a combined heating/ventilating or heating/air-conditioning system. The other type supplies radiant heat through pipes that carry hot water and are held in a concrete slab floor.

steam plant (conventional) : A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Steam Pressure: The amount of pressure that the steam has. It is either high pressure @800 lbs. or low pressure @ 210 lbs.

Steam Seal: A type of seal that is applied to the shaft on a turbine by putting steam around the shaft to stop the flow of air into

a turbine.

Steam Temperature: The temperature of the steam as it enters the turbine.

Steam transferred-credit: The expenses of producing steam are charged to others or to other utility departments under a joint operating arrangement.

Steam Trays: Items that let water pass through steam lines without losing steam pressure.

Steam turbine: A device that converts high-pressure steam, produced in a boiler, into mechanical energy that can then be used to produce electricity by forcing blades in a cylinder to rotate and turn a generator shaft.

Steckel Mill: A reversing steel sheet reduction mill with heated coil boxes at each end. Steel sheet or plate is sent through the rolls of the reversing mill and coiled at the end of the mill, reheated in the coil box, and sent back through the Steckel stands and recoiled. By reheating the steel prior to each pass, the rolls can squeeze the steel thinner per pass and impart a better surface finish.

Steel Drum: Center insert that keeps a coil from collapsing. Used on DR material.

Steel Insert: Small corrugated insert used to keep coils from collapsing before rewinding.

Steel Intensity: The amount of steel used per unit of gross domestic product. Intensity reflects the secular demand for steel, as opposed to cyclical demand. The amount of steel used in vehicles and the popularity of alternative materials affect the intensity, or how much steel is needed per unit produced. The state of the economy, however, determines the number of units.

Steel Intensive Products: Consumer products such as automobiles and appliances that, because so much of their weight is from steel, exhibit a high demand correlation with steel.

Steel Pressure Vessels: Steel Pressure Vessels are closed containers used to store a fluid or gas at pressures much different than ambient pressure. Steel is the common material of choice due to the material strength required to withstand the potentially large forces created by the differential pressures. While a spherical vessel is ideally the strongest design, pressure vessels are typically cylindrical with hemispherical end caps, or heads. This design serves as a compromise between the ideal design and one that is easier and more affordable to manufacture. The American Society of Mechanical Engineers (ASME) provides standards for the design of pressure vessels.

Steel Service Center Inventories: End of period material stocks reported by the Steel Service Center Institute (SSCI).

Steel Strapping: Banding and packaging material that is used to close and reinforce shipping units, such as bales, boxes, cartons, coils, crates, and skids.

Steel Substrate: Base metal which may be coated or plated.

Steel Superstructures: Steel superstructures are used to support equipment, lines, and switches in substations as well as transmission and distribution line towers and poles.

Stepped Construction: In patternmaking, the courses of material that when fastened together resemble steps.

Steering Roll: A device or set of rolls used to position the passline of the strip.

steering vector : steering vector in an antenna array, the complex weights associated with each an-tenna element to form a specific radiation pattern are called the steering vector, since these weights steer the radiation pattern in a specified direction.

Stellite: Proprietary name of a group of complex alloys retaining their hardness strength and resistance to oxidation at high temperatures; contains W, Co, Cr and C.

Stencil: Identification painted on pipe. Specification, size, wall test pressure, method of manufacture and mill are usually indicated.

Step bolt: A bolt or rung attached at intervals along a structural member and used for foot placement during climbing or standing.

Step Change: The change from one value to another in a single step.

Step Down Transformers: A transformer is an electrical device that transfers energy from one circuit to another. The transformer includes two coils, a primary and a secondary. When the primary coil is subjected to a varying current through the windings, a varying magnetic flux is generated in the coil. The varying magnetic flux results in a varying magnetic field in secondary winding, which in turn leads to a voltage. When a load is connected to the secondary winding, electric current flows and energy is transferred from the primary to the secondary coil. The ratio of primary to secondary windings is directly related to the ratio of the voltages. Therefore, when the secondary coil has fewer windings than the primary coil, the voltage is stepped down through the transformer.

step edge : step edge an idealized edge across which the luminance profile takes the form of a step function, i.e., a line separating two regions having different average gray-levels. See edge.

step index fiber : step index fiber a type of optical fiber where there is an abrupt transition from the core to cladding region, each region having a different refractive index; optical fiber in which the homogeneous core region has a higher index of refraction than a homogeneous cladding region, in contrast to a graded index fiber. This configuration is more typical of single mode fibers, than multimode fibers, which suffer from modal dispersion effects.

step index optical fiber : step index optical fiber See step index fiber .

step leaders: Thin, luminous feelers, caused by electrical breakdown in a cloud, that move in short bursts, or steps, and precede lightning strikes. Lightning begins in the negatively charged region at the base of a cloud. Here, thin, barely luminous feelers called step leaders zigzag through the cloud and can travel to the earth.

Step Potential: The voltage between the feet of a person standing near an energized grounded object. It is equal to the difference in voltage, given by the voltage distribution curve, between two points at different distances from the "electrode". A

person could be at risk of injury during a fault simply by standing near the grounding point.

step response: Behaviour of a circuit when the excitation is the unit step function. The excitation function may be a voltage or a current.

step response : step response the output of a linear time-invariant system when the inputs are varied as a step signal.

step size : step size when solving for the transient behavior of an electrical circuit, the associated differential equations are solved at specific points in time. The difference between two adjacent solution time points is known as the step size.

step voltage: step voltage in power system safety studies, the voltage measured across two points on the ground which are separated by a distance equal to an average person's step while walking over the area in question.

step voltage: The difference in surface potential experienced by a person bridging a distance of 1 m with his feet without contacting any other grounded structure.

step waveform: A waveform which has one level (usually zero) prior to zero time and another level after time zero.

step-and-scan : step-and-scan a type of projection printing tool combining both the scanning motion of a scanner and the stepping motion of a stepper.

step-down converter : step-down converter See buck converter.

Step-down Transmission Substation: These substations are located at switching points in an electrical grid. They connect different parts of a grid and are a source for subtransmission lines.

stepped leader : stepped leader in lightning, a discharge following the preliminary breakdown that propagates from a cloud toward the ground in a series of intermittent luminous steps with an average speed of 105 to 106 m/s. Negatively charged leaders clearly step, while positively charged leaders are more pulsating than stepped.

Stepped tones. : See bagpipes.

stepper : stepper a type of projection printing tool that exposes a small portion of a wafer at one time, and then steps the wafer to a new location to repeat the exposure. Also called a step-and-repeat camera.

Stepper motor: A motor type driven with digital codes that moves in discrete angular increments with each code change.

stepping correlation : stepping correlation a principle of operation of a correlation receiver in channel measurement, where pseudo-random sequences are utilized. The transmitted signal consists of a carrier modulated (typically employing phase-shift keying) by a pseudo-random sequence. The received signal is correlated (multiplied) by an exact replica of the transmitted signal by stepping the chip position of the reference signal with respect to the received signal through all or part of the chip positions. The output of a stepping correlator is a time-scaled version of the autocorrelation function of the pseudo-random sequence, or a part of it. The time-scaling factor depends on the rate with which all the chip positions of interest can be stepped. The rate of producing autocorrelation functions can be made much higher than in sliding correlation. See also sliding correlation.

Step-up Transmission Substation: Receives electric power from a nearby generating facility and uses a large power transformer to increase the voltage for transmission to distant locations.

steradian (sr): The steradian is SI unit of the solid angle. It is a supplementary unit. It is defined as the solid angle that, having its vertex in the centre of a sphere, cuts off an area of the surface of the sphere equal to that of a square with sides of length equal to the radius of the sphere.

stereo vision : stereo vision a vision model in which imaged objects are projected onto two image planes, to extract depth information from the scene. See also binocular vision.

Stereolithography Apparatus (Sla): Equipment used for computerized building of three dimensional models and patterns. Enables the data representation of a CAD solid model to be directly converted into a plastic model of a casting.

stereospecific : stereospecific directional covalent bonding between two atoms.

Sterling Silver: A silver alloy containing at least 95.2% Ag, the remainder being unspecified but usually copper.

Stick: See Hotstick.

Sticker: Steel sheets or strip adhering. Usually by fusion spots caused by overheating during box annealing.

Sticking: Adherence of foil surfaces sufficient to interfere with the normal ease of unwinding

sticky bit : sticky bit the least significant guard digit in floating-point representations. It is an indicator bit obtained through a logical "OR"

stiction : stiction in variable-speed drives, the initial static friction that must be overcome when the load is at rest.

stiff system : stiff system when an electrical circuit has widely separated time constants, the circuit is said to be stiff. The system of equations associated with the circuit is known as a stiff system, and special numerical methods must be used to maintain stability and accuracy when simulating a stiff system.

stiffness : stiffness as applied to a tie-line between generators, a low-impedance connection which forces the two generators to run in synchronization regardless of load variations on one or the other.

stiffness control : stiffness control in stiffness control a generalized joint force and/or torque is generated in response to small position error as to a constant task space stiffness matrix. See also stiffness matrix.

stiffness matrix : stiffness matrix the stiffness matrix of the arm endpoint is the inverse of the compliance matrix. See also compliance matrix.

Still gas: Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane and ethane. May contain hydrogen and small/trace amounts of other gases. Still gas is typically consumed as refinery fuel or used as petrochemical feedstock. Still gas burned for refinery fuel may differ in

composition from marketed still gas sold to other users.

still image: still image stationary image or single frame as opposed to moving image or video. Includes photographic images, natural im-ages, medical images, remote sensing im-ages. Usually implies multilevel (grayscale or color) rather than bilevel.

still image coding : still image coding compression of a still image. A coder consists of the four steps: data representation (typically by transform, decomposition into subbands or prediction), quantization (in which data is approximated or discarded according to some measure of its importance), clustering of nulls (in which runs or blocks of zero values are coded compactly), entropy coding (in which the statis-tical properties of the data are exploited in lossless compression).

stimulated emission : stimulated emission enhanced emission of electromagnetic radiation due to the pres-ence of radiation at the same frequency; also called induced emission.

stimulated light scattering : stimulated light scattering scattering of light from refractive index variations that are produced or amplified by the interac-tion of laser light with the material system, e.g., stimulated Brillouin scattering and stim-ulated Raman scattering.

Stinger: Slang for the wire connecting a fused cutout or switch to a transformer bushing.

STO: Same as ST but with oil-resistant thermoplastic outer jacket. 600V, 60°C to 105°C

stochastic ARMA (ARMAX) model : stochastic ARMA (ARMAX) model a generalized ARMA model in which the un-certain environmental effects are included as an independent noise input.

stochastic independence : stochastic independence independence of two random variables or two random pro-cesses.

stochastic process : stochastic process a collection of vector random variables defined on a common prob-ability space and indexed by either the inte-gers (discrete stochastic process) or the real numbers (continuous stochastic process). A stochastic process $x(t)$ is a vector func-tion of both time t and the sample path.

stochastic sampling : stochastic sampling a type of sampling that varies the time intervals between sam-ples. Stochastic sampling allows for a sig-nal to be sampled at a lower apparent sam-pling frequency achieving equal results to a signal sampled at a much higher sampling frequency. The apparent benefits of stochas-tic sampling are counterbalanced by the fact that the sampling interval, since it is chang-ing, must be recorded in addition to the signal samples, to reconstruct the signal correctly.

stochastic signal processing : stochastic signal processing the branch of signal processing that models and manip-ulates signals as stochastic processes rather than as deterministic or unknown functions. See also signal processing. See also random process.

Stock Allowance: Material added to a part to allow for surface preparation or precise dimensioning by machining.

Stock change: The difference between stocks at the beginning of the reporting period and stocks at the end of the reporting period. Note A negative number indicates a decrease (i.e., a drawdown) in stocks and a positive number indicates an increase (i.e., a buildup) in stocks during the reporting period.

Stock Core: Core of standard diameter usually made on a core machine and kept on hand, sawed to required length.

Stocks: Inventories of fuel stored for future use.

Stoker coal: refers to coal that has been crushed to specific sizes (but not powdered) for burning on a grate in automatic firing equipment.

Stokes Law of light scattering : Stokes Law of light scattering the state-ment that the scattering of light is typically accompanied by a shift to lower (not higher) frequencies.

Stomping Soil Compactors: A Stomping Soil Compactor is machine that is used to compact earth by repeatedly driving a large plate into the ground.

STOO: Same as STO but with oil-resistant insulation.

Stool: The platform on which coils are stacked on a base. Also known as stand.

Stool Plate: Plate on a mold machine on which stools are mounted.

Stooling: Supporting green sand cores in machine molding while pattern is being withdrawn.

stop bit : stop bit the last bit (high) transmitted in an asynchronous serial transmission to indi-cate the end of a character. In some serial transmissions, one and a half to two bits are used as stop bits.

Stop bit. : (in asynchronous transmission) the last bit used to indicate the end of a character; normally a mark condition which serves to return the line to its idle or reset state.

Stop Cock Valve: See PitCock Valve.

stopband: stopband the band of frequencies in a fil-ter or application at which substantial atten-uation or suppression is required relative to a passband. Stop band filtering is utilized to eliminate known high-level signals, which will disrupt system operation. Compare with passband.

stopband edge : stopband edge the frequency at which the attenuation of a signal diminishes; typically the frequency at which the signal is attenu-ated at 3 dB from the maximum response.

Stopper Head: A refractory shape at the end of a stopper rod, usually clay and graphite, seated in a ladle's nozzle.

Stopper Rod: A device in a bottom pour ladle for controlling the flow of metal through the nozzle into the casting. The stopper rod consists of a steel rod, protecting sleeves, and a graphite stopper head. It may also be a single piece manufactured from graphite.

Stopping Off: Filling in a portion of a mold cavity which is not to be cast.

Storage agreement: Any contractual arrangement between the responding company and a storage operator under which gas

was stored for, or gas storage service was provided to, the responding company by the storage operator, irrespective of any responding company ownership interest in either the storage facilities or stored gas.

Storage Bins: Used for storage of raw materials to ensure a necessary quantity required for sinter production.

Storage capacity: The amount of energy an energy storage device or system can store.

Storage Conditions: The conditions defined by means of ranges of the influence quantities, such as temperature, or any special conditions, within which the transducer may be stored (nonoperating) without damage.

Storage hydroelectric plant: A hydroelectric plant with reservoir storage capacity for power use.

Storage site: Spent nuclear fuel storage pool or dry cask storage facility, usually located at the reactor site, as licensed by (or proposed to be licensed by) the Nuclear Regulatory Commission (NRC).

storage temperature : storage temperature the maximum non-operating long-term temperature that a device or assembly will be exposed to or stored at without experiencing permanent degradation or damage.

Storage Vessels: Storage Vessels are used to hold consumer or industrial solids, fluids, or gases for later use. Some storage vessels may also be pressure vessels.

store : store (1) the act of placing a value into storage.(2) the place where data and instructions are stored.

store instruction : store instruction a machine instruction that copies the contents of a register into a memory location. Compare with load instruction.

stored program computer : stored program computer a computer system controlled by machine instructions stored in a memory; the instructions are executed one after the other unless otherwise directed.

Stored program control. : Generally, the application of computer techniques to the control of private or public telephone exchanges.

Storm door: A second door installed outside or inside a prime door creating an insulating air space. Included are sliding glass doors made of double glass or of insulating glass such as thermopane and sliding glass doors with glass or Plexiglas placed on either the outside or inside of the door to create an insulating airspace. Not included are doors or sliding glass doors covered by plastic sheets or doors with storm window covering on just the glass portion of the door.

Storm or multiple glazing: A building shell conservation feature consisting of storm windows, stormdoors, or double- or triple-paned glass that are placed on the exterior of the building to reduce the rate of heat loss.

Storm window: A window or glazing material placed outside or inside a window creating an insulating air space. Plastic material over windows is counted as a storm window if the same plastic material can be used year after year or if the plastic is left in place year-round and is in good condition (no holes or tears). If the plastic material must be put up new each year, it is not counted as a storm window. It is counted as "plastic coverings." Glass or Plexiglas placed over windows on either the interior or exterior side is counted as storm windows.

Straight Blade: A plug, connector, receptacle, flanged inlet or flanged outlet providing no locking features.

Straight Chrome: An iron alloy. A term indicating a group of stainless steels the principal alloying element of which is chromium in varying amounts from 4.00 to 27.00%.

straight edge detection : straight edge detection the location of straight edges in an image by computer. Often accomplished with the Hough transform.

Straightness: The absence of divergence from a right (straight) line in the direction of measurement

strain: strain semiconductors, strained either by external forces or due to lattice mismatched epitaxial growth, have modified band structures, especially the band gap and effective masses.

Strain Aging: Aging induced by cold work.

Strain Gauge Amplifier: A Strain Gauge Amplifier is used to increase the boost the signal of a strain gauge. This improves resolution of the gauge.

Strain Gauge Load Cell: A Strain Gauge Load Cell is used to measure elongation of a structure under load. It consisted of several conductors that can be adhered to the surface of the structure. As the structure elongates, the conductors stretch and their resistance increases. This change in resistance can be correlated to a mechanical strain.

Strain Hardening: An increase in hardness and strength caused by plastic deformation at temperatures below the recrystallization range.

strain insulator : strain insulator an insulator which forms an insulated tensile link between two conductors in overhead line work.

Strain Relief Connector: A Strain Relief Connector is used to connect a power cable to a device. Its purpose is to reduce crimping and bending of the cable.

Strain Relief Grip: A wire mesh grip used to relieve strain or stress at the transition point between relatively flexible cable or conduit and the rigid connection point.

Strained Casting: A phrase used to describe the result when molten metal is poured into the mold at too fast a rate or under too great metallstatic pressure, causing the cope to rise slightly from the drag and resulting in an oversize casting.

strained layer superlattices : strained layer superlattices epitaxially grown lattice mismatched alternating layers, usually designed to optimize a desirable property such as band gap, effective mass, quantum confinement, etc.

Strainer: A series of wire or fabric meshes, which are bonded together by caps or perforated cylinders and are fitted into hydraulic system passages to strain particles from fluid passed through the passage.

Strainer Basket: A metal filtering basket which is part of a strainer assembly.

Strainer Core: See Core Strainer

Strand: One of the wires that made up a stranded conductor.

Strand: A single unisulated wire.

Strand Lay: The distance of advance of one strand of a spirally stranded conductor, in one turn, measured axially.

Stranded: A number of solid wires twisted together to form a flexible conductor.

Stranded benefits: Benefits associated with regulated retail electric service which may be at risk under open market retail competition. Examples include conservation programs, fuel diversity, reliability of supply, and tax revenues based on utility revenues.

Stranded Conductor: A conductor made by twisting together a group of wire strands.

Stranded Conductor: A stranded conductor is a conductor composed of a group of wires, or of any combination of groups of wires.

Stranded Cost: Assets owned by an investor owned electric utility, normally costs associated with generation-related assets and statemandated contracts with nonutility generators that may now be uneconomic and unrecoverable in the restructured electric utility industry

stranded cost : stranded cost a facility like a nuclear power plant which cannot be charged to ratepayers after electric utility de-regulation takes place.

Stranded costs: Costs incurred by a utility which may not be recoverable under market-based retail competition. Examples include undepreciated generating facilities, deferred costs, and long-term contract costs.

strap : strap a conducting ring that ties tips of poles of magnetron or magnetron-like de-vices in a specified fashion for microwave potential and phase equalization.

Strap Dimmer/Fan Speed Control: Any dimmer or fan speed control that will fit into a traditional NEMA standard switch box, without and external heat sink.

strap fed device : strap fed device strapped magnetron-like device that operates by microwaves fed through the strapping such as amplatron am-plies and platinotron oscillators.

strategic conservation : Strategic conservation results from load reductions occurring in all or nearly all time periods. This strategy can be induced by price of electricity, energy-efficient equipment, or decreasing usage of equipment.

strategic load growth : A form of load building designed to increase efficiency in a power system. This load shape objective can be induced by the price of electricity and by the switching of fuel technologies (from gas to electric).

Strategic Petroleum Reserve (SPR): Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Stratigraphic test well: A geologically directed drilling effort to obtain information pertaining to a specific geological condition that might lead toward the discovery of an accumulation of hydrocarbons. Such wells are customarily drilled without the intention of being completed for hydrocarbon production. This classification also includes tests identified as core tests and all types of expendable holes related to hydrocarbon exploration.

Stratosphere: The region of the upper atmosphere extending from the tropopause (8 to 15 kilometers altitude) to about 50 kilometers. Its thermal structure, which is determined by its radiation balance, is generally very stable with low humidity.

stray coupling : Capacitive coupling that may occur between adjacent arms, sources, detector, leads etc.

stray light analysis : stray light analysis a computation to de-termined the intensity of unwanted light at var-ious locations in an optical system, combin-ing factors such as diffraction, surface scatter, spurious reflections, and optical design.

streak camera : streak camera a camera that performs one-dimensional imaging while also measur-ing the temporal evolution of the image.

stream: stream the sequence of data or instruc-tions that flows into the CPU during program execution.

stream cipher: stream cipher an encryption system or ci-pher in which the information symbols com-prising the plaintext are transformed into ci-phertext individually. An important property of a stream cipher is that like-valued plain-text symbols are not necessarily transformed into the same ciphertext. A stream cipher normally acts in an additive sense and in the case of bits being encrypted, the information bits X_n are added modulo-2 to the bits, Z_n , generated by the so-called running-key generator. The ciphertext Y_n is therefore given by $Y_n = X_n \oplus Z_n$, $n = 1, 2, \dots, N$, where the plaintext consists of N bits and \oplus denotes modulo-2 addition. Generally, the running key bits and the encryption key bits are not the same. The encryption key merely specifies the mechanism used to generate the running-key bits. Such a mechanism could be a num-ber of linear feedback shift registers whose outputs are combined to form the running-key bits. See also block cipher, encryption.

streamer: A ribbon like discharge.

streamer : streamer a precursor of the high-voltage electrical breakdown of a gas which con-sists of a linked series of local electron avalanches forming a finger-like structure ex-tending from one electrode toward another. Before a lightning strike, streamers extend from points on the earth up towards the thun-dercloud.

streamer mechanism : The development of a spark discharge directly from a single avalanche.

Stream-flow: The rate at which water passes agiven point in a stream, usually expressed in cubic feet per second.

strength duration curve : strength duration curve a curve express-ing the functional relationship between the threshold of excitation of a nerve fiber and the duration of a unidirectional square-wave electrical stimulus.

Stress Corrosion Cracking: Spontaneous failure of metals by cracking under combined conditions of corrosion and stress, either residual or applied.

Stress Corrosion Failure: A phenomenon which occurs when metal under stress in a corrosive atmosphere fails mechanically.

Stress Relief: Low temperature annealing for removing internal stresses, such as those resulting on a metal from work hardening or quenching.

Stress Relieving: A process of reducing residual stresses in a metal object to a suitable temperature and holding for a sufficient time. This treatment may be applied to relieve stresses induced by quenching, normalizing, machining, cold working, or welding.

Stress Rupture Test: A tension test performed at constant temperature, the load being held at such a level as to cause rupture. Also known as creep rupture test.

Stretch Forming: A process of forming panels and cowls of large curvature by stretching sheet over a form of the desired shape. This method is more rapid than hammering and beating.

Stretcher Leveling: Leveling where a piece of metal is gripped at each end and subjected to a stress higher than its yield strength to remove warp and distortion. Sometimes called patent leveling.

Stretcher Straightening: A process for straightening rod, tubing, and shapes by the application of tension at the ends of the stock. The products are elongated a definite amount to remove warpage.

Striation: A coating defect consisting of a series of near parallel lines or channels in the cured coating. Striation is a type of flow mark, which is caused by some contaminant, such a silicone flowout. Striation is similar to ribbing, but striation is usually smaller in size and not always parallel.

strict consistency : strict consistency the situation when a processor reads a shared variable and obtains the value produced by the most recent write to the shared variable irrespective of the pro-cessor that did the write operation.

strictness : strictness attribute of a function whereby one can compute the value error whenever one or more of their arguments have the value error.

stride : stride the spacing (measured in mem-ory address space) between the addresses of consecutive elements of a vector that are ac-cessed during the execution of a program loop. If the stride is one, all elements are accessed in order; if it is two, every other el-ement is skipped. See also memory stride.

Strike Off: Operation of removing excess sand from top or core box or flask.

Stringer: 1) A defect caused by the coating dies allowing excess coating to accumulate on the edge of the strip. 2) The last coil threaded through the line before a shutdown. The stringer coil remains in the line until start up.

Stringing: The act of installing overhead electrical wire or conductor.

Stringing Block: A sheave used to support and allow movement of a cable that is being installed. These are normally used overhead but there are also specialized designs used at the entrance to a conduit system. Stringing blocks are manufactured by Bethea.

Stringing Dolly: See "Stringing Block".

Strip: Thin, flat steel that resembles hot rolled sheet, but it is normally narrower (up to 12 inches wide) and produced to more closely controlled thicknesses. Strip also may be cut from steel sheet by a slitting machine (see Sheet Steel).

Strip Cooler: Set of adjustable air nozzles that blow compressed air on the strip to help achieve zinc drying.

Strip mine: An open cut in which the overburden is removed from a coal bed prior to the removal of coal.

Strip mining (surface): A method used on flatter rain to recover coal by mining long strips successively; the material excavated from the strip being mined is deposited in the strip previously mined.

Strip or stripping ratio: The amount of overburden that must be removed to gain access to a unit amount of coal. A stripping ratio may be expressed as (1) thickness of overburden to thickness of coal, (2) volume of overburden to volume coal, (3) weight of overburden to weight of coal, or (4) cubic yards of overburden to tons of coal. A stripping ratio commonly is used to express the maximum thickness, volume, or weight of overburden that can be profitably removed to obtain a unit amount of coal.

Strip Steel Chart: A chart that shows how much water pressure is going to the strip.

stripline : stripline a transmission line formed by a printed conductor sandwiched between two conductive-backed dielectrics.

Stripper Pins: On certain molding machines, a series of pins (usually four in number) which support the rammed flask half at the parting surface so that the mounted pattern may be drawn by lowering.

Stripper well: An oil or gas well that produces at relatively low rates. For oil, stripper production is usually defined as production rates of between 5 and 15 barrels of oil per day. Stripper gas production would generally be anything less than 60 thousand cubic feet per day.

Stripping: Removing the pattern from the mold or core box from core.

Stripping Time: In oil oxygen and nobake mixture, the moment when the core box may be satisfactorily drawn from the core, or pattern from the sand.

Strobe Light: A light that is used throughout the line to help 'see' defects. The strobe light is mainly used at the reflow areas.

Strobe triangulation. : A method of locating a jammer target by means of plotting the azimuths of the jammed sectors (strobes) of two or more remotely located radars jammed simultaneously by the same jammer.

stroboscope: Any device used to study, measure, balance, or otherwise alter the motion of a moving, rotating, or vibrating body by making it appear to slow down or stop with the use of pulsed bursts of light or by viewing it through intermittent openings in a revolving disk.

Stroboscopes: A Stroboscope is used to study cyclical motion. The object is illuminated at a frequency equal to or slower than the period of motion. This creates a visual effect of the object being studied moving much slower than its actual frequency.

strong inversion : strong inversion the range of gate biases corresponding to the “on” condition of the MOSFET. At a fixed gate bias in this region, for low drain-to-source biases, the MOSFET behaves as a simple gate-controlled resistor. At larger drain biases, the channel resistance can increase with drain bias, even to the point that the current saturates or becomes independent of drain bias.

strong localization of light : strong localization of light confinement of light inside a highly inhomogeneous medium due to very strong scattering.

Strowger. : Named after its inventor, this was the first switching technology used in public telephone exchanges.

structural controllability: structural controllability a dynamically where for a structured pair of matrices $A; B$ / there exists an admissible pair $A-; B-$ that is controllable.

Structural Metal Fabrications: Structural Metal Fabrications use a combination of beams, girders, plates and brackets to build a larger structure. Components are typically welded or bolted together.

structural pattern recognition : structural pattern recognition methods for carrying out the recognition of pattern on the basis of a structured representation. For instance, in many interesting problems, the patterns can effectively be given linguistic descriptions based on grammars.

Structural Quality: Material applicable to the various classes of structures, indicated by the standard specifications, which is suitable for the different mechanical operations employed for the fabrication of such structures. Structural quality (the characteristics of which are defined in the standard specifications of the American Society for Testing Materials) represents the quality of steel produced under regular or normal manufacturing conditions.

Structural Streak: See ?Streak, Structural?.

Structural Tubing: Tubing refers to sections of long, hollow, flexible cylinders typically used to move substances, usually fluids or gases. When tubing is referred to as structural tubing, it has been designed such that the cross-section shape, material selection and manufacturing process yield a tube that can support high-strength applications. Structural tubing is usually made of steel and hollow square and rectangular cross-sections are more common than round.

Structurals: Steel product group that includes I beams, H beams, wide flange beams and sheet piling. These products are used in the construction of multi story buildings, industrial buildings, bridge trusses, vertical highway supports, and riverbank reinforcement.

Structure: The arrangement of parts; in crystals, especially, the shape and dimension of the unit cell, and the number, kinds and positions of the atoms within it.

Structure (Cast Structure): The size and disposition of the constituents of a metal as cast.

structure estimation : structure estimation determination of the structure of objects, i.e., the 3-D coordinates of surface points of objects, from sequences of images. It is a task sometimes closely related to motion estimation.

structured cell : structured cell an element of a standard cell library designed using rules from the targeted wafer fabricator. Structured cells are integral multiples of a unit cell with interconnection points on all four sides of the cell. Structured cells normally interconnect simply by being placed next to another structured cell. Unwanted connections are broken as opposed to desired connections being made.

structured distribution systems (SDS) : structured distribution systems (SDS) a topology that advocates cabling saturation of a desired environment to accommodate all potential personnel movements and reconstructions within that office.

structured light : structured light patterns of light projected onto objects which are to be viewed by cameras and interpreted by computer. For example, a grid of parallel straight lines of light projected on to a curved object will appear from a separate viewpoint to be curved and will provide information on the 3-D shape of the object.

structured matrix : structured matrix a matrix whose entries are either zeros or independent free parameters.

structured noise : structured noise noise that is not random but that is typically periodic, or contains elements of some unwanted signal. This category of noise includes clutter, crosstalk, easily recognized spikes, and so on.

structured uncertainty : structured uncertainty low-order parameter perturbations or unmodeled variations represented by a family of models with uncertain parameters ranging within a pre-specified set. In the case of linear systems with models in frequency domain, an uncertain system with structured uncertainties is represented by a family of rational matrices with given the highest order and a pre-specified set for each uncertain parameter. In the state space counterpart, an uncertain system with structured uncertainties is represented by a family of matrices (in the state equations of known dimensions depending on uncertain parameters from the pre-specified set).

structuring element : structuring element an image or shape that is used in a morphological operator as a probe interacting with the image to be analyzed, leading thus to a transformation of that image. It can be either a set of points (a colorless shape), or a gray-level image (a shape with a gray-level profile on it). In contrast with the natural image to be processed, the structuring element is chosen by the user and generally has a small support. See morphological operator.

stub : stub a short section of transmission line, usually short-circuited or open-circuited at one end, designed to present a specific impedance at the other end. Stubs are typically employed as impedance matching elements.

stub tuner : stub tuner matching network, either double-stub or triple-stub, used to match all load admittances.

stuck-at fault : stuck-at fault a fault model represented by a signal stuck at a fixed logic value (0 or 1).

stuck-open : stuck-open in logic circuits, refers to a fault wherein the value of a signal is “stuck” at the open-circuit value.

Stx, start of text. : A control character used to indicate the beginning of a message; it immediately follows the header in transmission blocks.

Styrene: A colorless, toxic liquid with a strong aromatic aroma. Insoluble in water, soluble in alcohol and ether; polymerizes rapidly; can become explosive. Used to make polymers and copolymers, polystyrene plastics, and rubber.

Styroform Pattern: Expendable pattern of foamed plastic, especially polystyrene, use in manufacturing casting by the Full_Mold process.

Sub: A short coupling with different types and/or sizes of ends.

Sub Boundary Structure : A network of low angle boundaries (usually with misorientations or less than one degree) within the main grains of a microstructure.

subband analysis: subband analysis decomposition of a signal into a set of subbands by using a filter bank, followed by an appropriate subsampling. See also subband synthesis.

sub-band coding : sub-band coding (1) a method for source coding where the input signal is divided into frequency subbands, through the use of, e.g., a filter bank. The sub-bands are then quantized separately. Such methods utilize the fact that most real-world signals contain low amounts of information in some frequency regions and much information in other. Hence, enhanced compression can be obtained by focusing (only) on "important" frequency regions.(2) image coding scheme in which the image is first filtered to create a set of images containing a limited range of frequencies. These images are down sampled and encoded using one or more coders. The reverse is carried out at the receiver to reconstruct the original image.

sub-band pyramid : sub-band pyramid sub-band coding using quadrature mirror filters (QMF) provides a natural hierarchical structure and is called sub-band pyramid. This is quite similar to the Laplacian pyramid.

subband signal: subband signal the outputs of subband analysis are referred to as subband signals.

subband synthesis: subband synthesis a process in which a signal is generated from the subband signals through upsampling and filtering. See also subband analysis.

Subbituminous coal: A coal whose properties range from those of lignite to those of bituminous coal and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million Btu per ton on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

sub-block : sub-block a part of a cache line that can be transferred to or from the cache and memory in one transaction. This is applicable in the cases where the complete line cannot be transferred in one transaction. Each sub-block requires a valid bit.

Subcarrier frequency shift. : The conveying of telegraphic information by shifting an audio frequency carrier which is then used to modulate a radio frequency carrier for radio transmission. Where only two discrete steps of subcarrier frequency shift are involved, it is also known as two-tone keying.

subchannel I/O : subchannel I/O the portion of a channel subsystem that consists of a control unit module, the connections between the channel subsystem and the control unit module, and the connections between the control unit module and the devices under its control. In earlier versions of the IBM channel architecture, the subchannel was known as an I/O channel.

subcircuit : subcircuit a simulation approach that allows an efficient description of repetitive circuitry.

Subcompact/compact passenger car: A passenger car containing less than 109 cubic feet of interior passenger and luggage volume.

sub-critical: sub-critical the state of a fission chain reaction which is not self-sustaining because an insufficient number of neutrons are produced at each fission.

Subcritical Annealing: An annealing treatment in which a steel is heated to a temperature below the A1 temperature and then cooled slowly to room temperature.

Subcutaneous Blowhole: Blowholes at or near the surface of solidified metal, covered with a thin layer of metal. May also be called pinhole porosity.

Subdivision: A prescribed portion of a given State or other geographical region.

Subgrain: A portion of a crystal or grain slightly different in orientation from neighboring portions of the same crystal. Generally, neighboring subgrains are separated by low angle boundaries.

subjective contour : subjective contour illusory contours perceived by the visual system even in the presence of no real intensity change. A typical example is Kanisza triangle.

Submersible: Apparatus is designated as submersible when so constructed that it operates successfully in water under specified

Submersible Centrifugal Pumps: A Submersible Centrifugal Pump uses a rotating impeller to pump fluid. Submersible pumps have waterproof electrical connections and are often used to pump water from the bottom of a tank, well, or reservoir.

Submersible Mixers: A Submersible Mixer is used to keep solids in suspension. In its most basic design, the mixer is a simply a rotating fan on a shaft for churning fluid to maintain a uniform composition. They are a key component in a wastewater treatment plant.

Submersible Motors: A Submersible Motor is a motor with all electrical connections design to be waterproof. The majority of submersible motors are induction motors and require no electrical contact between the rotor and stator.

Submersible Slurry Pumps: A Submersible Slurry Pump is a specially design to reliable pump liquid with a high

concentration of solids. Submersible slurry pumps can be operated underwater and are used in mineral processing and wastewater treatment applications.

Submersible Sump Pump: A Submersible Sump Pump is a pump that is used to remove fluid from a sump, which is a low space that collects water in a below grade structure, like a basement.

submersible transformer : submersible transformer a transformer, used in underground distribution work, which is capable of operation while sub-merged in water.

Submersible Water Pump: A Submersible Water Pump is a pump that is design to be used underwater. It has waterproof electrical connection. Most submersible water pumps are centrifugal, and uses a impeller connected to the shaft of any electric motor to pump water.

Submetered data: End-use consumption data obtained for individual appliances when a recording device has been attached to the appliance to measure the amount of energy consumed by the appliance.

sub-millimeter (SMM): sub-millimeter (SMM) the portion of the electromagnetic spectrum corresponding to wavelengths less than a millimeter, but longer than those of the long-wave infrared (> 20– 30 m).

Subplate: A metal base to which a specific valve may be attached using a specified bolt kit.

subroutine : subroutine a group of instructions writ-ten to perform a task, independent of a main program; can be accessed by a program or another subroutine to perform the task.

subroutine call and return (IE) : subroutine call and return (IE) the subroutine call is a specialized JUMP or BRANCH instruction that provides a means to return to the instruction following the call instruction after the subroutine has been completed. A RETURN instruction is usually provided for this purpose.

subsampling pyramid : subsampling pyramid a spatial domain hierarchy is generated by repeatedly subsam-pling the original image data. The recon-struction at any level simply uses the sub-sampled points from all previous levels in conjunction with the new points from the cur-rent level.

Subsea Pressure Vessels: A Subsea Pressure Vessel is a pressure vessel that is designed to be used underwater. Typical applications include flotation and buoyancy tanks for seagoing structures.

Subsea Welding: Subsea Welding refers to the practice of joining metals underwater. This is typically done by a diver using a gas tungsten arc welding (GTAW) technique.

Subsidiary: An entity directly or indirectly controlled by a parent company which owns 50% or more of its voting stock.

subsidiary communication authorization (SCA) : subsidiary communication authorization (SCA) services for paging, data transmis-sion, specialized foreign language programs, radio readings services, utility load manage-ment and background musing using multi-plexed subcarriers from 53–99 kHz in con-nection with broadcast FM.

subspace based : subspace based algorithm based on split-ting the whole space into two orthogo-nal complements, the signal and noise sub-spaces, and exploiting properties of the de-sired signal in these two subspaces. See also MUSIC, ESPRIT, signal subspace, noise subspace.

Substation: Name given to an area that is an electrical power distribution center. A substation may contain several feeders of different voltages, transformers, and the associated circuit breakers and instrumentation for protection.

Substation: Facility equipment that switches, changes, or regulates electric voltage.

substation : substation a junction point in the elec-tric network. The incoming and outgoing lines are connected to a busbar through cir-cuit breakers.

substation battery : substation battery a battery used to pro-vide operating energy for the protective relay operations and to initiate circuit breaker oper-ations in a generating substation. The battery is necessary, as the equipment must work re-liably during severe voltage sags and outages on the AC system.

Substation Configuration Language: Normalized configuration language for substation modeling as expected by IEC 618506.

Substation Dcs Systems: Substation DCS (Distributed Control System) refers to a power generation system in which the substations have decentralized control and can be monitored and communicated to from a number of points on the power grid via a system of controllers.

Substation Transformers: A Substation Transformer is used to transform an incoming voltage into a desired output voltage. Often, a step down transformer is used to transform high voltage used in long distance power transmission into a lower voltage for residential and light industrial use. A Step up transformer, on the other hand, increases the voltage for heavy industrial usage.

substation : A facility used for switching and/or changing or regulating the voltage of electricity. Service equipment, line transformer installations, or minor distribution or transmission equipment are not classified as substations.

Substations: A high-voltage electric system facility. It is used to switch generators, equipment, and circuits or lines in and out of a system. It also is used to change AC voltages from one level to another, and/or change alternating current to direct current or direct current to alternating current.

Substitutional Solid Solution: A solid solution in which the solvent and solute atoms are located randomly at the atom sites in the crystal structure of the solution.

Substrate: The layer of metal underlying a coating, regardless of whether the layer is base metal.

Substrate: The physical material upon which a photovoltaic cell is made.

substrate : substrate a dielectric or semiconductor slab over which active devices, planar trans-mission lines, and circuit

components are fabricated. This can be a PCB, a ceramic, or a silicon or other semiconductor wafer that has electronic components interconnected to perform a circuit function. See also wafer.

subsynchronous resonance : subsynchronous resonance an electric power system condition where the electric network exchanges energy with a turbine generator at one or more of the natural frequencies of the combined system below the synchronous frequency of the system.

subthreshold : subthreshold the range of gate biases corresponding to the "off" condition of the MOSFET. In this regime, the MOSFET is not perfectly "off" but conducts a leakage current that must be controlled to avoid circuit errors and power consumption.

subtractor : subtracter a circuit that subtracts two values.

subtractive polarity : subtractive polarity polarity designation of a transformer in which terminals of the same polarity on the low- and high-voltage coils are physically opposite each other on the transformer casing. With subtractive polarity, a short between two adjacent terminals results in the difference of the two coil voltages appearing between the remaining terminals. Subtractive polarity is generally used on transformers larger than 500 kVA and higher than 34.5 kV. Smaller units use additive polarity. See the diagram below. See also additive polarity.

subtransient impedance : subtransient impedance the series impedance that a generator or motor exhibits during the subtransient period, typically the first few cycles of a fault. Subtransient impedances are generally used in calculating fault currents for determining instantaneous relay settings.

Subtransmission: A set of transmission lines of voltages between transmission voltages and distribution voltages. Generally, lines in the voltage range of 69 kV to 138 kV.

subtransmission : subtransmission the circuits which connect bulk power substations to distribution substations.

Subtransmission Lines: These lines carry voltages reduced from the major transmission line system, usually 69 kv.

Sub-Transmission System: A high voltage system that takes power from the highest voltage transmission system, reduces it to a lower voltage for more convenient transmission to nearby load centers, delivering power to distribution substations or the largest industrial plants. Typi

subway transformer : subway transformer another name for a submersible transformer.

Subzero Treatment: Refrigeration of steel to promote transformation of retained austenite.

successive approximation : successive approximation an A/D conversion process that systematically evaluates the analog signal in n steps that produce an n-bit code. The analog signal is successively compared to determine the digital code, beginning with the determination of the most significant bit of the code.

successive cancellation : successive cancellation multiple-access receiver technique in which users are estimated one by one, first subtracting previously estimated data from the received signal.

Successive-Approximation ADC: ADC that sequentially compares a series of binary-weighted values with an analog input to produce an output digital word in a steps, where n is the bit resolution of the ADC.

Suck In: A Defect caused when one face of a forging is sucked in to fill a projection on the opposite side.

Suction Filter: A filter that cleans the hydraulic oil as it leaves the system's storage tank before it enters the pump.

Sudden ionospheric disturbance (sid). : In propagation. Follows solar flare by about two minutes. Characterized by a sudden fading or quietness across the entire high frequency band.

sudden pressure relay : sudden pressure relay a protective relay that senses the internal pressure in a transformer tank, and operates on sudden changes in this pressure. These sudden pressure changes reliably indicate a fault inside the tank.

sufficient statistic : sufficient statistic for a parameterized family of probability distributions $f(x; \theta)$, depending upon some parameter θ , it is a common problem to estimate from observation of a sample, X drawn according to an unknown member of this family. A statistic $S(X)$ is called a sufficient statistic of X for θ if it retains all the information available in X for the estimation of θ .

Sugeno fuzzy rule : Sugeno fuzzy rule a special fuzzy rule in the form if x is A and y is B then z is D where "if x is A and y is B " is the antecedent, A and B are fuzzy sets, and the consequent is the crisp (nonfuzzy) function z is D . See also fuzzy IF-THEN rule, fuzzy inference system.

Sulfation: A condition that afflicts unused and discharged batteries; large crystals of lead sulfate grow on the plate, instead of the usual tiny crystals, making the battery extremely difficult to recharge.

Sulfation (Battery): The formation of lead sulfate of such physical properties that it is extremely difficult, if not impossible, to reconvert it to active material.

Sulfide Spheroidization: A stage of overheating in which sulfide inclusions are partly or completely spheroidized.

Sulfide Staining: A coating defect consisting of a dark grey black colored residue on tinplate which occurs when a break in the coating permits a high sulfur food to contact the tinplate.

Sulfur: Chemical symbol S) Element No. 16 of the periodic system; atomic weight 32.06. Non metal occurring in a number of allotropic modifications, the most common being a pale yellow brittle solid. In steel most commonly encountered as an undesired contaminant. However, it is frequently deliberately added to cutting stock, to increase machinability.

Sulfur: A yellowish nonmetallic element, sometimes known as "brimstone." It is present at various levels of concentration in many fossil fuels whose combustion releases sulfur compounds that are considered harmful to the environment. Some of the most commonly used fossil fuels are categorized according to their sulfur content, with lower sulfur fuels usually selling at a higher price. Note No.2 Distillate fuel is currently reported as having either a 0.05 percent or lower sulfur level for on-

highway vehicle use or a greater than 0.05 percent sulfur level for off-highway use, home heating oil, and commercial and industrial uses. Residual fuel, regardless of use, is classified as having either no more than 1 percent sulfur or greater than 1 percent sulfur. Coal is also classified as being low-sulfur at concentrations of 1 percent or less or high-sulfur at concentrations greater than 1 percent.

Sulfur dioxide: 2A toxic, irritating, colorless gas soluble in water, alcohol, and ether. Used as a chemical intermediate, in paper pulping and ore refining, and as a solvent.

sulfur hexafluoride : sulfur hexafluoride a heavy, highly-electronegative gas used as a high-voltage, self-healing insulation.

Sulfur hexafluoride: 6A colorless gas soluble in alcohol and ether, and slightly less soluble in water. It is used as a dielectric in electronics. It possesses the highest 100-year Global Warming Potential of any gas (23,900).

Sulfur oxides: xCompounds containing sulfur and oxygen, such as sulfur dioxide (SO₂) and sulfur trioxide (SO₃).

Sulfur Print: A macrographic method of examining for the distribution of sulfide impurities, in which a sheet of wet acidified bromide paper is placed on the polished surface to be examined.

Sulfur-Hexafluoride (SF₆): A very dense, inert, nonconducting gas used inside high voltage equipment to insulate conducting components from surfaces at ground potential. It also is used as an interrupting medium in high voltage circuit breakers.

sulphur (in coal): One of the elements present in varying quantities in coal which contributes to environmental degradation when coal is burned. In terms of sulphur content by weight, coal is generally classified as low (less than or equal to 1 percent), medium (greater than 1 percent and less than or equal to 3 percent), and high (greater than 3 percent).

sum of products (SOP) : sum of products (SOP) a standard form for writing a Boolean equation that contains product terms (input variables or signal names either complemented or uncomplemented ANDed together) that are logically summed (ORed together).

sum-frequency generation: sum-frequency generation the process in which two light beams of frequencies !1 and !2 interact with a nonlinear optical material to produce a beam at frequency !3 D !1 C!2 by means of the second-order susceptibility.

Summary of ccitt recommendations : v series recommendations, covering data transmission over telephone circuits.

Summer and winter peaking: Having the annual peak demand reached both during the summer months (May through October) and during the winter months (November through April).

summing amplifier : An op amp that combines several inputs and produces an output that is the weighted sum of the inputs.

Sun tempering: A sun-tempered building is elongated in the east-west direction, with the majority of the windows on the south side. The area of the windows is generally limited to about 7% of the total floor area. A sun-tempered design has no added thermal mass beyond what is already in the framing, wall board, and so on. Insulation levels are generally high.

Sunk cost: Part of the capital costs actually incurred up to the date of reserves estimation minus depreciation and amortization expenses. Items such as exploration costs, land acquisition costs, and costs of financing can be included.

Sunspace: A room that faces south, or a small structure attached to the south side of a house.

Super Draw Lead: Also known as a split conductor. Historically bushings offered a draw lead rating of 400 amps, but by using Trench's split conductor in COTA bushings the draw leads now have ratings of 3,000 amps.

super high definition television (SHDTV) : super high definition television (SHDTV) television at resolutions of 2000 2000 pixels and higher.

Superalloys: An alloy developed for very high temperature use where relatively high stresses are encountered and where oxidation resistance is needed.

supercomputer : supercomputer at any given time, the most powerful class of computer available.

superconducting magnetic bearing : superconducting magnetic bearing a magnetic bearing utilizing levitation between a magnet and a superconductor.

Superconducting magnetic energy storage (SMES): SMES technology uses the superconducting characteristics of low-temperature materials to produce intense magnetic fields to store energy. SMES has been proposed as a storage option to support large-scale use of photovoltaics and wind as a means to smooth out fluctuations in power generation.

Superconductivity: The abrupt and large increase in electrical conductivity exhibited by some metals as the temperature approaches absolute zero.

Superconductivity: The pairing of electrons in certain materials when cooled below a critical temperature, causing the material to lose all resistance to electricity flow. Superconductors can carry electric current without any energy losses.

super-conductivity: The electrical resistance of a metal or alloy which decreases with decrease in temperature and becoming vanishingly small at a finite temperature.

superconductivity : superconductivity a state of matter whereby the correlation of conduction electrons allows a static current to pass without resistance and a static magnetic flux to be excluded from the bulk of the materials.

superconductor : superconductor a material that loses all electrical resistance below a certain temperature. Superconductors prevent externally applied magnetic fields from penetrating their interior. They are considered perfect diamagnetic materials. Once the externally applied field exceeds a critical value, the materials revert back to a nonsuperconducting status.

Supercooling: Cooling to a temperature below that of an equilibrium phase transformation without the transformation taking place.

super-critical: super-critical the state of a nuclear fission reaction which more neutrons are produced than are necessary to compensate for neutron absorption and leakage.

superdirectivity : superdirectivity a condition of a phased array in which the excitation of the array elements is adjusted to obtain a directivity greater than that achievable with uniform excitation. Such antennas are often impractical, because high excitation currents are usually required, leading to ohmic losses that more than offset the additional directivity. Superdirective antennas also typically have high reactive fields and thus exhibit very narrow bandwidth.

Superduty Fireclay Brick: Having pce above 33 with less than 1.0 percent linear shrink in the 1599 B0C (2910 B0F) reheat test, and less than 4.0 percent loss in panel spalling test preheated at 1649 B0C (3000 B0F).

Superficial Rockwell Hardness Test: Form of Rockwell hardness test using relatively light loads which produce minimum penetration. Used for determining surface hardness or hardness of thin sections or small parts, or where large hardness impression might be harmful.

superfluorescence : superfluorescence usually refers to the enhanced spontaneous emission that occurs due to self-organization into a coherent state by a system of atoms or molecules.

Superheated Steam: Steam that has passed through the superheater elements and has become saturated with heat to a temperature of approximately 850 degrees. Higher steam temperature allows for greater expansion of the steam in its end use and thus more work can be performed by a given amount of steam.

superheater : superheater a heat exchanger that increases the steam temperature to about 1000 degrees F. It is heated by the flue gases.

Superheater Elements: Bank of boiler tubes whose purpose is to increase the steam temperature under the same pressure before it exits the boiler. Only steam passes through the superheater elements. This bank of tubes is in the hottest fire in the boiler

superheterodyne : superheterodyne an architecture used in virtually all modern-day receivers. In the early days of radio, tuned stages of amplification were cascaded in order to secure a sufficiently high level of signal for detection (demodulation).

superheterodyne receiver : superheterodyne receiver most receivers employ the superheterodyne receiving technique, which consists of either down-converting or up-converting the input signal to some convenient frequency band, called the intermediate frequency band, and then extracting the information (or modulation) by using an appropriate detector. This basic receiver structure is used for the reception of all types of bandpass signals, such as television, FM, AM, satellite, and radar signals.

superlattice : superlattice a stack of ultrathin layers of material. Layer thicknesses are sufficiently thin to produce quantum-confined effects, typically 100–1000 angstroms; generally, there are two different layer compositions, and the superlattice is built with layer composition in an alternating scheme.

supernode : supernode a cluster of nodes, interconnected with voltage sources, such that the voltage between any two nodes in the group is known.

superparamagnetism : superparamagnetism a form of magnetism in which the spins in small particles are exchange coupled but may be collectively switched by thermal energy.

superpipelined processor : superpipelined processor a processor where more than one instruction is fetched during a cycle in a staggered manner. That is, in an n-issue superpipelined processor, an instruction is fetched every $1/n$ of a cycle. For example, in the MIPS R4000, which is two-issue superpipeline, a new instruction is fetched every half cycle. Thus, in effect, the instruction pipeline runs at a frequency double than the system (in the R4000 the pipeline frequency is 100 MHz, while the external frequency is 50 MHz). Superpipeline processors usually have a relatively deep pipeline, of about 7 stages or more (8 stages on the R4000).

superpipelining : superpipelining a pipeline design technique in which the pipeline units are also pipelined internally so that multiple instructions are in various stages of processing within the units. The clock rate is increased accordingly.

superpolish : superpolish methods for producing a surface of low RMS roughness, typically 10 angstroms RMS or less; methods include special mechanical, chemical, and ion polishing techniques.

superposition: The superposition principle states that the results in a circuit due to independent sources can be superposed to give the resultant quantity.

superposition coding : superposition coding multiple-access channel coding technique in which each user encodes independently, such that at the receiver, the transmitted signals may be estimated using successive cancellation. See also successive cancellation.

Superposition theorem: A method for analyzing a complex network of bilateral (conducts equally well in both directions) components having multiple sources.

superradiance : superradiance usually refers to the strongly enhanced spontaneous emission that is emitted by a coherently prepared system of atoms or molecules.

super-resolution: super-resolution the process of combining data from multiple, similar images of the same object to form a single image with increased spatial resolution.

Supersaturated: Metastable solution in which the dissolved material exceeds the amount the solvent can hold in normal equilibrium at the temperature and under the other conditions that prevail.

superscalar processor : superscalar processor a processor where more than one instruction is fetched, decoded, and executed simultaneously. If n instructions are fetched and processed simultaneously, it is called an n-issue superscalar processor. For example, the Pentium is a two-issue, and the DEC 61164 is a four-issue superscalar processor. This feature was implemented both on CISC (Pentium) and RISC (61164) processors.

Supersonic Reflectoscope: An instrument for sending, receiving, and measuring sound waves over 20,000 cycles per second.

Superstrate: The covering on the sun side of a photovoltaic module, providing protection for the photovoltaic materials from impact and environmental degradation while allowing maximum transmission of the appropriate wavelengths of the solar spectrum.

Supersucker: A truck that is used to remove sludge from the plater cells and plater distribution tank.

Super-synchronous satellite. : A satellite having an orbital period greater than that of a synchronous satellite.

supervised learning : supervised learning (1) a procedure in which a network is trained by comparing its output, in response to each training data item, with a target value (label) for that item. Net-work weights are adjusted so as to reduce the differences between outputs and targets until these differences reach acceptable values.(2) a training technique in statistical pat-tern recognition or artificial neural networks in which the training set includes a predefined desired output.

supervised learning for self-generating neural network : supervised learning for self-generating neural network there are two ways for supervised learning in SGNN. The first is the same as that of supervised learning for a self-organizing system. The second is to make use of information gains of the attributes to the classification. That is, use the inner product of the training vector and the infor-mation gain vector corresponding to its at-tributes to train the network. Experiments show that this way of supervised learning for SGNN can significantly improve both the performance of the network and the train-ing speed. See also self-generating neural network, information gain, learning vector quantization.

supervised learning for self-organizing system : supervised learning for self-organizing system See learning vector quantization.

supervisor mode : supervisor mode one of two CPU modes, the other being user mode. Sometimes called privileged mode, this mode allows access to privileged system resources such as special instructions, data, and registers.

supervisor state : supervisor state one of two CPU states, the other being user state. When the CPU is in supervisor state, it can execute privileged instructions.

Supervisory Control: Supervisory control refers to equipment that allows for remote control of a substation's functions from a system control center or other point of control.

Supervisory Control and Data Acquisition (electric): A system of remote control and telemetry used to monitor and control the transmission system. NERC definition

Supplemental gas: Any gaseous substance introduced into or commingled with natural gas that increased the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke-oven gas, still gas, manufactured gas, biomass gas, or air or inerts added for Btu stabilization.

Supplemental gaseous fuels supplies: Synthetic natural gas, propane-air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

supplementary insulation: In dependent insulation applied in addition to basic insulation in order to provide protection against electric shock in the event of a failure of basic insulation.

supplier : A person or corporation, generator, broker, marketer, aggregator or any other entity, that sells electricity to consumers, using the transmission or distribution facilities of an electric distribution company.

Supply: The components of petroleum supply are field production, refinery production, imports, and net receipts when calculated on a PAD District basis.

supply mains: permanently installed power source which may also be used to supply electrical apparatus

Supply source: May be a single completion, a single well, a single field with one or more reservoirs, several fields under a single gas-purchase contract, miscellaneous fields, a processing plant, or a field area; provided, however, that the geographic area encompassed by a single supply source may not be larger than the state in which the reserves are reported.

Supply Voltage: The nominal voltage, or voltage range, at which the photoelectric sensor is designed to be operated continuously.

Supply, petroleum: A set of categories used to account for how crude oil and petroleum products are transferred, distributed, or placed into the supply stream. The categories include field production, refinery production, and imports. Net receipts are also included on a Petroleum Administration for Defense(PAD) District basis to account for shipments of crude oil and petroleum products across districts.

supply-side management: Steps utilities take to manage their generating and transmission facilities for maximum efficiency.

supply-side : Technologies that pertain to the generation of electricity.

Support equipment and facilities: These include, but are not limited to, seismic equipment, drilling equipment, construction and grading equipment, vehicles, repair shops, warehouses, supply points, camps, and division, district, or field offices.

Support Grip: A wire mesh grip used for permanent or temporary support of a length of cable.

support of a fuzzy set : support of a fuzzy set the crisp set of all points x in X with membership positive ($A.x/ > 0$), where A is a fuzzy set in the universe of discourse X . See also fuzzy set, membership function.

Support Pin: Large steel pin used to hold the burr mashers in place.

supporting plane : supporting plane a planar structure that is an external support for a packaging and inter-connecting structure, used to alter the struc-ture's coefficient of thermal expansion.

Supporting structure: The main supporting unit (usually a pole or tower) for transmission line conductors, insulators, and other auxiliary line equipment.

Suppressed Voltage: The amount of voltage allowed to pass through a surge suppression device to the equipment connected to the device.

Suppressed Voltage Rating: Determined by UL when specific current and voltage is applied to a surge suppression device. For permanent devices UL tests at 3000A, 6000V while portable devices are tested at 500A, 6000V.

Supramor: An electromagnetic flaw detection ink for the rapid detection of subcutaneous and surface flaws in ferrous metals.

supremal decision unit : supremal decision unit control agent or a part of the controller of the partitioned system, which perceives the objectives and the operation of this system as a whole and is concerned with following these overall objectives; in case of a large-scale system with hierarchical multilevel (two-level) controller, the coordinator unit is often regarded as the supremal decision unit.

supremum operator : supremum operator an operation that gives the least upper bound function. For example, if S is the supremum of a set A, then S is the upper bound of A, and no value less than S is an upper bound of A.

surface acoustic wave (SAW) : surface acoustic wave (SAW) a surface acoustic wave (also known as a Rayleigh wave) is composed of a coupled compressional and shear wave. On a piezoelectric substrate, there is also an electrostatic wave that allows electroacoustic coupling. The wave is confined at or near the surface and decays away rapidly from the surface.

surface acoustic wave (SAW) device : surface acoustic wave (SAW) device in this device, electrical signals are converted to acoustic signals, processed, and then converted back to electrical energy. Due to their small propagation velocity, acoustic waves have small wavelengths; thereby, one can construct miniature high performance components such as filters using SAW devices.

Surface Blasting: Surface Blasting is a technique in which an abrasive is combined with a pressurized air to mechanically abrade a surface to remove rust, corrosion, paints, or coatings.

Surface Contamination: A defect referring to a particle or substance foreign to the typical surface generated during normal steel production. Such a foreign substance may be in the form of a film, oxide growth, imbedded material, etc., and may cause discoloration, poor lacquer adhesion, container forming problems, corrosion, etc.

Surface Critical: An order specification which indicates the end use requirement and dictates special processing to ensure a uniform, defect free surface.

Surface drilling expenses (uranium): These include drilling, drilling roads, site preparation, geological and other technical support, sampling, and drill-hole logging costs.

Surface Finish: (Tin Mill Products) The ground roll finishes are 7B, a smooth finish, normally for melted coatings intended for special applications; 7C, the standard mill finish, for either melted or unmelted coatings is the finish used for most applications. The blasted roll finishes are 5B, a shot blast finish (SBF) with a melted tin coating; 5C, a shot blast finish with an unmelted tin coating, principally for crowns and closures; 5D, a shot blast finish with and unmelted tin coating primarily for D&I cans.

surface flashover: Surface flashover is a breakdown of the medium in which the solid is immersed. The role of the solid dielectric is only to distort the field so that the electric strength of the medium is exceeded.

Surface Hardening: generic term covering several processes applicable to a suitable ferrous alloy that produce, by quench hardening only, a surface layer that is harder or more wear resistant than the core. There is no significant alteration of the chemical composition of the surface layer. The processes commonly used are induction hardening, flame hardening and shell hardening. Use of the applicable specific process name is preferred.

surface impedance : surface impedance the impedance exhibited by the surface of a conductor/dielectric due to the variation in its conductivity with frequency.

Surface Imperfections: A superficial defect that mars the surface of steel and is detrimental to the end use; examples include blisters and roll mark defects.

Surface Inclusion: An inclusion or non metallic particles that shows through at the surface of the steel. (See also Inclusion)

Surface Lampholder: A lampholder of any type intended for mounting on a flat or plane surface.

Surface mine: A coal-producing mine that is usually within a few hundred feet of the surface. Earth above or around the coal (overburden) is removed to expose the coalbed, which is then mined with surface excavation equipment, such as draglines, powers hovels, bulldozers, loaders, and augers. It may also be known as an area, contour, open-pit, strip, or auger mine.

Surface Mount Hinge: A Surface Mount Hinge is used as a pivot point to install a door on a cabinet. They are easy to install and require minimal alterations to the structure.

surface mount technology (SMT) : surface mount technology (SMT) the electrical connection of components to the surface of a conductive pattern without component lead holes.

Surface Mounted: A device intended to be installed on the surface a wall, panel, or equipment.

Surface Oil Oil Which: Oil which is applied for corrosion protection or other special purposes.

Surface Panel Mount Sockets: A Surface Panel Mount Socket is a electrical connection that can be mounted on to a door or panel easily with only a few bolts or screws. They are commonly used to connect a electrical cabinet to an outside power source.

surface plasmon : surface plasmon a surface polariton in a plasma medium.

surface polariton : surface polariton a polariton that propagates as a wave along the interface between two media.

Surface Protection Air Liquide (Spal): The use of liquid argon, liquid nitrogen, or carbon dioxide snow to minimize the reaction of air and molten metal that normally occurs in an induction furnace. The liquid or snow is fed onto the surface of the

molten metal where it vaporizes, displacing the air thus reducing slag and oxygen levels.

Surface Resistivity: The surface resistivity of a material is the ratio of the potential gradient parallel to the current along its surface to the current per unit width of the surface, usually expressed in ohms. (Note Surface resistivity of a material is numerically equal to the surface resistance between two electrodes forming opposite sides of a square, the square size being immaterial.)

Surface rights: Fee ownership in surface areas of land. Also used to describe a lessee's right to use as much of the surface of the land as may be reasonably necessary for the conduct of operations under the lease.

Surface Roughness : The texture or pattern of a steel surface determined by the grit on the roll or the grind on a brite roll.

surface scattering : surface scattering scattering at the rough boundary between two media of different re-fractive index.

Surface Tear: Minute surface cracks on rolled products which can be caused by insufficient ingot scalping,

Surface Tension: The force acting on the surface of a liquid, tending to minimize the area of the surface; quantitatively, the force that appears to act across a line of unit length on the surface. Also known as interfacial force; interfacial tension; surface tension.

surface texture : surface texture See texture, texture analysis, texture modeling.

surface wave : surface wave a wave that propagates with dissipation in one direction and exponentially decays (without propagating) in the other di-rections. Most of the field is contained within or near the interface. Surface waves are supported, for example, by a dielectrically coated conductor or by a corrugated conductor.

surface-mounted package : surface-mounted package in both elec-trical and mechanical devices, a mounting technique between chip and substrate using solder joints between pads on the two sur-faces. The advantage is that higher circuit densities can be achieved on the board.

surge: A transient (or momentary) wave of current, potential, or power in an electric circuit.

surge : surge a short-duration (microsecond to millisecond) increase in power line voltage. Also called a spike or an impulse.

Surge Arrester: See Arrester.

surge arrester: A protective device for limiting surge voltages on equipment by discharging or bypassing surge current. It prevents continued flow of follow through current to earth, and is capable of repeating these functions as specified.

Surge Arrester: the protection system for electrical equipment from over voltage induced by some circumstances.

surge arrester : surge arrester a device that limits over-voltages by conducting large currents in re-sponse to an overvoltage. Surge arrestors are typically connected line to ground in trans-mission and primary distribution systems. They can be employed in a variety of connec-tions in secondary distribution, and can be necessary in communications, sensing, and control circuits.

Surge Arrestors: A Surge Arrester is used to protect delicate electronics from an overvoltage surge, such as what can occur during a lightning strike.

surge impedance: surge impedance the ratio of voltage to current on that line for a high speed wave propagating down the line. The surge impe-dance of a line is a constant which depends on the line geometry and conductor charac-teristics. On power transmission lines, these waves are typically generated by lightning strokes, circuit breaker switching, etc. Also called characteristic impedance.

surge impedance loading (SIL) : surge impedance loading (SIL) of a transmission line, the characteristic impe-dance with resistance set to zero (resistance is assumed small compared to reactance). The power that flows in a lossless transmission line terminated in a resistive load equal to the line's surge impedance is denoted as the surge impedance loading of the line.

surge response voltage : surge response voltage the voltage that appears at the output terminals of surge pro-tection equipment and is seen by loads con-nected to that device both during and after a surge condition.

surge tank : surge tank an empty vessel located at the top of the penstock. It is used to store wa-ter surge when the turbine valve is suddenly closed.

Surge Valve: A valve that is used to release pressure and wind on a blower and to vent it to atmosphere.

Surge Withstand: The SWC test wave is an oscillatory wave, frequency range of 11.5 MHz, voltage range of 2.53 kV crest value of first peak, envelope decaying to 50% of the crest value of the first peak in not less than 6 micro seconds from the start of the wave. The sou

Surge Withstand Capability (swc) Test: A measure of an electrical device's ability to withstand highvoltage or highfrequency transients of short duration without damage.

Surge : A very rapid increase of current or voltage.

Surge-Supression: The use of a device containing electronic components which limits peak voltage to a pre determined value when voltage spikes or surges appear on the connected line.

Surplus energy: Energy generated that is beyond the immediate needs of the producing system. This energy may be supplied by spinning reserve and sold on an interruptible basis.

surplus energy: Excess firm energy available from a utility or region for which there is no market at the established rates.

Survey Equipment: Survey Equipment is used to measure distances and positions on earth. Surveying is a fundamental civil engineering technique.

Survival Power: The amount of power a mill must generate to keep power on critical areas (e.g. blast furnace, BOP, etc.) in the event that we should lose feeders 206 and 208 from Mon Power.

susceptance: That part of the admittance that does not consume active power. The imaginary part of admittance. For a pure

reactance, it is also the inverse of the reactance.

susceptibility : susceptibility the part of the permittivity or permeability that is attributable to the electromagnetic behavior of the medium. In a linear, isotropic medium, the electric susceptibility is numerically equal to the relative permittivity minus one, and the magnetic susceptibility is equal to the relative permeability minus one. See also electric susceptibility.

Suspended rates: New rates that have been accepted for review by a utility commission. When these rates are suspended, they do not go into effect for a designated period of time. Charges under the new rate may be refunded after the resolution of the rate proceeding.

Suspended Solids Analyser: A Suspended Solids Analyser is used to measure the concentration of suspended solids in a fluid, also known as turbidity, by measuring the reflection of infrared light in a fluid sample.

Suspension Insulators: An insulator type usually made of porcelain that can be stacked in a string and hangs from a cross arm on a tower or pole and supports the line conductor.

sustained interruption : sustained interruption all interruptions that are not momentary. Generally used when referring to long duration voltage interruptions of greater than 1 minute.

SV: Vacuum cleaner cord, two or three-conductor, rubber-insulated. Overall rubber jacket. For light duty in damp locations. 300V, 60°C

SV system : SV system single variable system. See also single-input-single-output system .

SVC : SVC supervisor call instruction. See also software interrupt.

Svc, switched virtual circuit. : (in a packet-switched network) a temporary virtual circuit between 2 users.

SVO: Same as SV except neoprene jacket. 300V, 60°C

SVT: Same as SV except all-plastic construction. With or without third conductor for grounding purposes only. 300V, 60°C to 90°C

SVTO: Same as SVT except with oil-resistant thermoplastic jacket. 60°C

SW: Rubber jacketed power supply cable (8AWG to 2AWG) C.S.A. 600 Volt.

Swage: Operation of reducing or changing the cross sectional area by revolving the stock under fast impact of blows. Finishing tool with concave working surface; useful for rounding out work after its preliminary drawing to size.

Swamp coolers (evaporative coolers): Air-conditioning equipment that removes heat by evaporating water. Evaporative cooling techniques are most commonly found in warm, dry climates such as in the Southwest, although they are found throughout the country. They usually work by spraying cool water into the air ducts, cooling the air as the spray evaporates.

Swan, Joseph : Swan, Joseph (1828–1914) Born: Sunderland, England Swan is best known as the inventor of the incandescent lamp. During his life he acquired seventy patents in many areas. He was a devoted experimentalist with interests in photography, the development of miner's lamps, batteries, electroplating, and artificial silk. Swan teamed with Edison in 1883 to form the Edison and Swan United Electric Light Company after Edison's suit for patent infringement was dismissed. J. W. Starr and W. E. Staite were the early pioneers who inspired Swan to research that led to his knight-hood in 1904.

swap : swap in assembly language, an instruction that swaps two values one for the other.

Swash Plate: A stationary canted plate in an axial type piston pump, which causes the pistons to reciprocate as the cylinder barrel rotates.

Sweeling (Battery): The swelling or bulging of a battery case that results from cell vents not allowing enough internal pressure to be relieved.

sweep: Movement of the electron beam across a CRT screen.

sweep generator : sweep generator a frequency source that can be setup to sweep from a start frequency to a stop frequency in a specified time interval.

Sweep jammer. : A transmitter that emits a jamming signal consisting of a carrier wave (unmodulated or modulated), the frequency of which is continuously varied within a given bandwidth.

Sweep jamming. : A narrow band of jamming that is swept back and forth over a relatively wide operating band of frequencies.

Sweep. : The pattern of light or marking on the face of a cathode ray tube caused by the predetermined deflection and modulation of the electron beam.

Swell: A casting defect consisting of an increase in metal section due to the displacement of sand by metal pressure.

swell: A momentary overvoltage lasting up to a few seconds.

swell : swell a voltage or current RMS value at supply frequency that increases for a time period from 0.5 cycles to 1 minute.

Swimming Pool Pumps: A Swimming Pool Pump is used to filter and recirculate pool water. This prevents the water from stagnating.

swing bus: swing bus in power-flow studies, a bus in the power system which is assigned unknown real and reactive power so as to compensate for losses in the system.

swing curve : swing curve a sinusoidal variation of a parameter, such as the critical dimension or the dose-to-clear, as a function of resist thickness caused by thin film interference effects.

swing equation : swing equation a nonlinear differential equation utilized in determining the dynamics of synchronous machines. See also electromechanical equation.

Swing Frame Grinder: A device for grinding large castings where the work remains stationary. This grinder, too large to be hand lifted, is usually suspended from a hoist.

Swing Lathes: A Swing Lathe is a lathe that features a cut out in the bed to accommodate the turning of large diameter parts.
Swing Loaders: A Swing Loader is a front end loader with a pivoting bucket to allow a load to be dumped to the side of the loader.

Switch: A device used to open (turn off) and close (turn on) electrical circuits that can be designed to be operated by numerous actions such as toggle, slide, and pushbutton actions. Standard configurations include SPST, SPDT, DPST, and DPDT.

switch: A mechanical device capable of making, carrying and breaking current under normal circuit conditions, which may include specified operating overload conditions, and also of carrying for a specified time currents under specified abnormal circuit conditions such as those of short circuit. It may also be capable of making, but not breaking, short circuit currents.

Switch: A device for making, breaking or changing the connections in an electric circuit.

Switch: A device for making breaking or changing the connections in an electric circuit.

switch : switch (1) a device that allows current flow when closed and provides isolation when open. The switch provides similar functions to the circuit breaker, but cannot interrupt fault currents. Some switches are capable of making and breaking load currents, while others are only able to break charging current. Switches can be either manually controlled or motor controlled. See also single-pole single-throw, single-pole double-throw, transmit/receive switch, all-optical switch.(2) a device comprising a number of input and output ports and circuitry to switch packets from one input port to one or more output ports based on the addressing information contained in the packet header.

Switch (1). : Informal for data packet.

Switch (2). : (in packet-switched networks) the device used to direct packets, usually located at one of the nodes on the network's backbone.

Switch, general use: A switch intended for use in general distribution and branch circuits. It is rated in amperes and is capable of interrupting its rated voltage.

Switch, general-use snap: A type of general-use switch so constructed that it can be installed in flush device boxes or on outlet covers, or otherwise used in conjunction with wiring systems recognized by the National Electric Code.

Switch, isolating: A switch intended for isolating an electrical circuit from the source of power. It has no interrupting rating and is intended to be operated only after the circuit has been opened by some other means.

Switch, knife: A switch in which the circuit is closed by a moving blade engaging contact clips.

Switch, linked : A switch the contacts of which are so arranged as to make or break all poles simultaneously or in a definite sequence.

Switch, motor-circuit: A switch, rated in horsepower, capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

Switch, Network: A Switch connects Client systems and servers together to create a network. It selects the path that the data packet will take to its destination by opening and closing an electrical circuit.

Switch, transfer: A transfer switch is an automatic or non-automatic device for transferring one or more load conductor connections from one power source to another.

switchboard: A large single panel, frame, or assembly of panels on which are mounted on the face, back, or both, switches, overcurrent and other protective devices, buses, and usually instruments. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets.

Switchboard: A large single panel, frame, or assembly of panels having switches, overcurrent, and other protective devices, buses, and usually instruments mounted on the face or back or both. Switchboards are generally accessible from the rear and from the front and are not intended to be installed in cabinets.

Switchboard Wire: Chemically cross-linked polyethylene or asbestos insulated wire resistant to heat, flame, and corrosive vapor.

Switchboard. : In an exchange, a suite of one or more operating positions at which the interconnection of lines is manually controlled.

Switchboards: Switchboards are electronic equipment designed for controlling the distribution of incoming power to different outputs.

switched combining : switched combining a method of diversity combining in which the receiver is switched between alternative communication channels to find the channel that yields the best signal quality. See also angle diversity, antenna diversity.

Switched line.: A communications link for which the physical path may vary with each usage, such as the public telephone network.

switched reluctance machine : switched reluctance machine a doubly salient, singly excited electrical machine that contains a different number of poles on the stator and rotor. Since there are a different number of poles on the rotor and stator, only one stator phase can be aligned at a time with the rotor. When operated as a motor, the stator phases are sequentially switched on and off to pull the rotor into alignment with them. This requires knowledge of the rotor position to properly excite the stator phases. The switched reluctance machine can also operate as a generator. In this case the stator windings are charged with a current as the rotor comes into alignment. When the current reaches a determined level, the windings are reconnected to send current out of the machine. As the rotor is driven, the inductance drops, causing an increase in current. This type of machine requires an external capacitor bank, switches and diodes in each phase, and a sophisticated control system to operate.

Switches: Distribution systems have switches installed at strategic locations to redirect power flows for load balancing or

sectionalizing.

Switchgear: Switchgear is a device that uses disconnects, fuses, and circuit breakers to isolate electric equipment from incoming power for maintenance or repair.

Switchgear: A general term covering switching and interrupting devices and their combination with associated control, metering, protective and regulating devices. Also, the assemblies of these devices with associated interconnection, accessories, enclosures and supp

Switchgear : An assembly of main and auxiliary switching apparatus for operation, regulation, protection or other. control of an electrical installation.

Switching: An action by the Load Dispatcher of opening or closing various circuit breakers in the plant for various reasons such as work by line gang, work by breaker gang, restoring lost power.

switching amplifier : switching amplifier a type of amplifier that utilizes switching between the cutoff and saturated states to minimize the time in the lossy transition states, thus achieving high efficiencies. All class D, E, and S amplifiers fit into this general group. Parameters such as device characteristics, quiescent bias point, RF load line, significant harmonic and/or mixing frequencies, and amplitude and waveform of the applied signal(s) should be included with the class definition, thus defining the major contributors to the physical actions taking place in one of these amplifiers.

Switching communications system.: In telecommunications, assembly of equipment and procedures, organized so as to effect automatic interconnection of channels, circuits and trunks, and/or handing of traffic, through switching facilities.

switching flow graph model : switching flow graph model a large-signal dynamic modeling method for PWM switching circuits. The circuit is viewed as two linear sub-circuits, one with the switch on and one with the switch off. Flow graphs are obtained for the subcircuits and then combined using switching branches to form a switching flow graph. The switching flow graph provides a graphical representation of the dynamic switching circuit from which the large-signal, small-signal, and steady-state behaviors can be extracted.

switching frequency : switching frequency the frequency at which converter switches are switched. In sine-triangle PWM switching applications, the switching frequency is defined by the triangle wave frequency, i.e., the carrier frequency.

Switching Impulses: See "Lightning and Switching Impulses".

Switching matrix. : (in lan technology) the electronic equivalent of a cross-bar switch.

switching node : switching node a computer or computing equipment that provides access to networking services.

switching order : switching order procedure which includes the sequence of switching operations to shift load.

switching power supply : switching power supply a power supply, with one or more outputs, based on switching converters. The output(s) may be regulated via a control technique.

Switching station: Facility equipment used to tie together two or more electric circuits through switches. The switches are selectively arranged to permit a circuit to be disconnected or to change the electric connection between the circuits.

switching station : Facility equipment used to tie together two or more electric circuits through switches. The switches are selectively arranged to permit a circuit to be disconnected, or to change the electric connection between the circuits.

switching surge : switching surge a momentary overvoltage in a power system which results from energy stored in the magnetic field of a long power line being injected into the system at the instant that the line is switched out of service.

Switching Surges: A high voltage spike that occurs when current flowing in a highly inductive circuit, or a long transmission line, is suddenly interrupted.

switching time : switching time the time required for an entity to change from one state to another.

Switching, automatic. : A method of operation which effects automatic interconnection of channels, circuits and trunks and/or handling of traffic through a switching facility.

Switch-Leg: That part of a circuit run from a lighting outlet box where a luminaire or lampholder is installed down to an outlet box that contains the wall switch that turns the light or other load on or off it is a control leg of the branch circuit.

Swivel Joint: A connector or fitting that is equipped with seals or o rings that allow it to partially rotate while passing a fluid path through a sealed internal passage.

SWO: Same as SW except neoprene jacketed (C.S.A.).

SWT: Plastic jacketed power supply cable (8AWG to 2AWG) 600V (C.S.A.).

SWU: See Separative Work Unit

symbol error rate : symbol error rate a fundamental performance measure for digital communication systems. The symbol error rate is estimated as the number of errors divided by the total number of demodulated symbols. When the communication system is ergodic, this is equivalent to the probability of making a demodulation error on any symbol.

symbol synchronization : symbol synchronization a technique to determine delay offset or rate of symbol arrival from the received signal. Can be based on either closed or open loop methods.

Symbolic name. : A means used to identify a collection of stations (as in an access group) or computer ports (as in a resource class).

symmetric half plane field : symmetric half plane field the class of image models which can be implemented recursively pixel by pixel. That is, if the pixels in an image are ordered lexicographically (either by rows or by columns), then a symmetric half plane model is one in which a pixel p is a function of only those pixels preceding p in the ordering. See also Markov random field .

symmetric multiprocessor : symmetric multiprocessor a multiprocessor system where all the processors, memories, and

I/O devices are equally accessible without master–slave relationship.

symmetric resonator : symmetric resonator a standing-wave resonator with identical right and left mirrors; usually refers to the mirror curvatures and not the mirror transmissions.

symmetrical component : symmetrical component the method by which unbalanced three-phase power system operation (particularly unbalanced fault performance) can be efficiently analyzed. Symmetrical components convert unbalanced line currents and voltages to three sets of balanced sequence components: positive sequence, negative sequence, and zero sequence.

symmetrical components : The analysis of an unbalanced three phase system into three balanced components, namely the positive sequence, negative sequence and zero sequence.

symmetrical fault : symmetrical fault another term for a three-phase fault, a fault in which all three conductors of a three-phase power line are short-circuited together. System faults are symmetrical and can be analyzed by using single phase circuit.

symmetrical fault current : symmetrical fault current the total current flowing to a fault less the DC offset current. In many cases, fault current calculations are expressed in terms of symmetrical amps.

symmetries of nonlinear susceptibility : symmetries of nonlinear susceptibility the elements of the nonlinear susceptibility tensor are not all independent. For instance, any rotational symmetries of the material medium will be reflected in tensor properties of the susceptibility. In addition, there are symmetries that depend on the frequency dependence of the susceptibility. For instance, intrinsic permutation symmetry states that the susceptibility is unchanged under simultaneous interchange of two input frequencies and two input tensor indices. Likewise, full permutation symmetry states that the susceptibility is unchanged under simultaneous interchange of two frequencies and two tensor indices, input and output considered interchangeably. Kleinman symmetry states that the susceptibility is unchanged under interchange any two tensor indices, input and output considered interchangeably.

Syn, synchronous idle. : (in synchronous transmission) a control character used to maintain synchronization and as a time fill in the absence of data. The sequence of 2 syn characters in succession is used to maintain synchronization following each line turnaround.

sync distribution : sync distribution a system that allows for the distribution of sync pulses to multiple devices.

sync generator : sync generator (1) signal generator that is designed to produce a specified signal waveform in order to synchronize a specific electronic device or system.(2) an electronic unit used to generate the sync (synchronizing) information used in a video signal. Sync generators typically provide signals, such as horizontal sync, vertical sync, composite sync, and blanking. The sync generator signals are used in a video facility to keep all video signals properly aligned with each other.

sync interval : sync interval the time period between neighboring sync pulses.

sync separator : sync separator electronic circuitry used to separate the horizontal and vertical sync information that are contained in a composite video or composite sync signal.

sync tip : sync tip the sync level that represents the peaks of the sync signal.

Sync. : Short for synchronous or for synchronous transmission.

Synchro : A rotary electromagnetic device generally used as an AC feedback signal generator, which indicates position. It can also be used as a reference signal generator.

synchro : synchro also called a selsyn (for self-synchronous). An AC servo machine used in pairs primarily for remote sensing and shaft positioning applications. Its construction is essentially that of a wound-rotor induction machine with either a single-phase or 3-phase rotor winding. Various stator and rotor inter-connections are possible, depending on desired function and required torque.

synchro-check relay : synchro-check relay a device used to monitor the frequency and phase angle of the voltages across an open circuit breaker. Synchro-check relays are commonly used to prevent breaker closing or reclosing on excessive voltage or frequency difference.

synchronization : synchronization (1) a situation when two or more processes coordinate their activities based upon a condition.(2) the process of determining (usually channel) parameters from a received signal, for example carrier frequency offset, carrier phase, or symbol timing.

synchronization, synchronizing. : The process of making the receiver be “in step” with the transmitter; usually achieved by having a constant time interval between successive bits, by having a pre-defined sequence of overhead bits and information bits, and by having a clock.

Synchronize : The act of bringing one electrical system (or generator) into perfect electrical alignment with a separate electrical system. For example, the A phase of system 1 would be reaching its peak at the exact same time as the A phase of system 2. It is only when you have this synchronization that you can close a circuit breaker and tie the two systems together.

synchronized CDMA : synchronized CDMA a CDMA system where all the users are time-synchronized, i.e., the signals associated with all users arrive at the receiver with identical time delays.

Synchronized group. : A synchronized group is several transmitters suitably sited for masking another transmitter. All transmitters carry the same modulation or keying supplied from a common source. All operate on exactly the same frequency.

synchronizing coefficient : synchronizing coefficient electrical torque component in phase with the rotor angle.

synchronizing relay : synchronizing relay a relay that monitors the voltage across an open circuit breaker to determine the frequency and phase relationship of the voltage sources on either side of the breaker. Synchronizing relays are used on generator breakers to bring the generator to the system frequency and to match the phase angle between the generator and

system prior to closing the breaker.

Synchronous: An event or action that is synchronized to a reference clock.

synchronous : synchronous an operation or operations that are controlled or synchronized by a clocking signal.

synchronous bus : synchronous bus a bus in which bus transactions are controlled by a common clock signal and a fixed number of clock periods is allocated for specific bus transactions. Compare with asynchronous bus.

synchronous circuit : synchronous circuit a sequential logic circuit that is synchronized with a system clock.

synchronous condenser : synchronous condenser an unloaded, over-excited synchronous motor that is used to generate reactive power.

Synchronous Condensers: A synchronous condenser is a synchronous machine running without mechanical load and supplying or absorbing reactive power to or from a power system. Also called a synchronous capacitor, synchronous compensator or rotating machinery.

Synchronous Converter or Rotary Converter: Converts an alternating current to a direct current.

Synchronous data channel. : A communication channel capable of transmitting timing information in addition to data. More properly called an "isochronous" data channel.

synchronous demodulation : synchronous demodulation a form of a phase sensitive angle demodulation in which local oscillator is synchronized or locked in frequency and phase to the incoming carrier signal.

synchronous detection : synchronous detection demodulation scheme using a balanced modulator to translate the center frequency of an IF signal down to DC (i.e., zero Hz). A local oscillator (LO) tuned to the IF center frequency is injected into one of the input ports of the balanced detector, while the AM or SSB signal containing the information is applied to the other. When used in this manner, the LO is often referred to as a beat frequency oscillator (BFO). Low-pass filtering the output results in retrieval of the intelligence signal, superimposed upon a DC voltage (or current, dependent upon the actual device). The DC value may either be discarded via high-pass filtering, or used as a received signal strength indicator for use in automatic gain control circuits.

synchronous digital hierarchy (SDH) : synchronous digital hierarchy (SDH) an international interface specification for high-speed optical fiber transmission networks that allows different manufacturers' equipment to be interconnected with full maintenance and signal transparency. Specifies the optical parameters and the basic rates and formats of the signal. Emphasizes protection from faults and fast restoration of service after service interrupts.

synchronous drive : synchronous drive a magnetic drive characterized by synchronous transmission of torque, typically using a salient pole structure. There is no slip between the driver and the follower.

Synchronous Gensets: A Synchronous Genset is a series of generators that convert motion to electrical power via rotation of permanent magnets. The rotating magnetic field creates an AC voltage

synchronous machine: A machine which runs at a fixed speed, dependent on the frequency, called the synchronous speed. The machine speed is thus independent of the load.

synchronous machine : synchronous machine an AC electrical machine that is capable of delivering torque only at one specific speed (n_s), which is determined by the frequency of the AC system (f) and the number of poles (P) in the machine. The relationship between synchronous speed and the other variables is $n_s = 120f/P$

Synchronous Motor: A Synchronous Motor is an AC motor which spins at some frequency multiple of the input AC frequency. They are generally employed in applications where constant motor speed is critical.

Synchronous Motor: An alternating current motor which operates at the speed of rotation of the magnetic flux.

synchronous motor : synchronous motor an AC motor in which the average speed of normal operation is exactly proportional to the frequency to which it is connected. A synchronous motor generally has rotating field poles that are excited by DC.

synchronous operation : synchronous operation an operation that is synchronized to a clocking signal.

Synchronous operation (cryptographic). : A method of on-line crypto operation in which terminal cipher equipments have timing systems to keep them in step, synchronism of the system being independent of the traffic passing on the channel concerned and regardless of circuit conditions.

synchronous reactance : synchronous reactance the inductive reactance of the armature windings in synchronous machines under steady-state conditions. Designated by the symbol X_s , expressed in ohms per phase, the synchronous reactance is a function of the stator inductance and the frequency of the stator currents.

synchronous reference frame : synchronous reference frame a two-dimensional space that rotates at an angular velocity corresponding to the fundamental frequency of the physical stator variables (voltage, current, flux) of a system. In electric machines/power system analysis, an orthogonal coordinate axis is established in this space upon which fictitious windings are placed. A linear transformation is derived in which the physical variables of the system (voltage, current, flux) are referred to variables of the fictitious windings. See also arbitrary reference frame, rotor reference frame, stationary reference frame.

synchronous reluctance machine : synchronous reluctance machine a type of synchronous machine that has no rotor winding. The rotor consists of salient poles, which causes the reluctance to vary as a function of position around the airgap. When operated as a motor, a rotating magnetic field is established by the stator windings that causes a reluctance torque on the rotor as the path of lowest permeability stays aligned with the peak of the stator flux wave.

synchronous reluctance motor : synchronous reluctance motor a synchronous motor that depends on a reluctance variation on the rotor for the mechanism of torque production. The rotor shape is designed to provide a high difference in the reluctances between the d and q axes.

synchronous speed : synchronous speed speed of the rotating magnetic flux produced by three-phase currents in stationary coils in three-phase AC machines. The synchronous speed is calculated by a knowledge of the number of poles of the machine and the frequency of the stator currents as $N_s = 120f_s / P$

synchronous speed : A mechanical speed related to the electrical frequency by number of pairs of poles. $n = f/p$ rps = $60f/p$ rpm

Synchronous transmission. : Transmission in which the data characters and bits are transmitted at a fixed rate with the transmitter and receiver synchronized. This eliminates the need for individual start bits and stop bits surrounding each byte, thus providing greater efficiency. Contrast with asynchronous transmission.

synchronous updating : synchronous updating all units in a neural network have the values of their outputs updated simultaneously.

Synchronous. : A satellite with a mean sidereal period of revolution about the primary body equal to the sidereal period of the primary body about its own axis. Note: a synchronous earth satellite must be synchronised to the sidereal period of the earth.

synchronously pumped-modelocked (SPM) laser : synchronously pumped-modelocked (SPM) laser a laser in which periodic pump pulsations arrive at the amplifying medium of a laser oscillator in synchrony with the circulating mode-locked pulses, a standard technique for obtaining sub-picosecond pulsations.

synchroscope : synchroscope a device used to determine the phasor angle between two 3-phase systems. It is normally used to indicate when two systems are in phase so that they can be connected in parallel.

Synchronous Speed: This is the speed at which the magnetic field within the motor is rotating. It is also approximately the speed that the motor will run under no load conditions. For example, a 4 pole motor running on 60 cycles would have a magnetic field speed of 1800 RPM. The no load speed of that motor shaft would be very close to 1800 RPM. The difference between the synchronous speed and the full load speed is called the slip RPM of the motor.

sync-locking : sync-locking a condition in which a circuit will continue to follow the sync pulse even with variations in amplitude and phase.

syndrome : syndrome bit pattern used for error-detection and correction that is formed by multiplying the received vector by the parity-check matrix. Any two n-tuples that have the same syndrome can differ at most by a code word.

synonym : synonym in a virtual addressed cache, when a real address has more than one virtual address, the name given to the virtual addresses.

syntax : syntax the part of a formal definition of a language that specifies legal combinations of symbols that make up statements in the language.

synthesis filter : synthesis filter a bank of filters that recombines the components decomposed by analysis filters from different frequency bands.

synthesizer : synthesizer a software program that creates GDS2 data from a hardware description language specification such as VHDL or Verilog.

synthetic aperture radar (SAR) : synthetic aperture radar (SAR) a technique for overcoming the need for large antennas on side-looking airborne radar (SLAR) systems. The effect of a large antenna is synthesized by using Doppler shifts to classify the return signals, generating a very small effective beamwidth. The process is quite similar to that of holography, since the amplitude and frequency of the signals is recorded over time.

synthetic diamond : synthetic diamond diamond grown artificially, usually as a film, for industrial purposes such as hardness, thermal conductivity, or optical properties.

Synthetic Fluid: A hydraulic oil (fluid) that is made from a synthetic base. A fluid manufactured to specified characteristics. Normally will not support combustion if heated to a specific temperature.

Synthetic Gear Oils: Synthetic Gear Oils are used to lubricate the moving components in a gearbox or transmission. Synthetic Oils have chemistries that are formulated for specific lubrication properties and is an improvement over mineral oils

Synthetic Lubricant: A lubricant is a compound used to reduce friction between moving surfaces such as those found in motors, engines, shafts, gears and other mechanical connections. While some lubricants may be natural, such as water, others are man-made, or synthetic. Synthetic lubricants combine multiple chemicals into a compound that delivers superior performance. For example, synthetic oils are produced with chemical additives to improve lubrication, increase resistance to heat breakdown, and increase the effectiveness of the oil for a longer period of time.

Synthetic Molding Sand: Any sand compounded from selected individual materials which, when mixed together, produce a mixture of the proper physical and mechanical properties from which to make foundry molds.

Synthetic natural gas (SNG): (Also referred to as substitute natural gas) A manufactured product, chemically similar in most respects to natural gas, resulting from the conversion or reforming of hydrocarbons that may easily be substituted for or interchanged with pipeline-quality natural gas.

synthetic oil : Oil produced by artificial means and having similar properties to mineral oil.

Synthetics Cleaners: Synthetic Cleaners are specially formulated chemical compounds that are designed for specific cleaning purposes.

System (electric): Physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management or operating supervision.

system (electric) : physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management.

System (gas): An interconnected network of pipes, valves, meters, storage facilities, and auxiliary equipment used in the transportation, storage, and/or distribution of natural gas or commingled natural and supplemental gas.

system bus : system bus in digital systems, the main bus over which information flows.

System control point (scp) : A cis engineering monitor and control point providing quality control and channel switching facilities.

System controller. : An individual at a technical system control point who is responsible for maintaining quality control and/or channel switching of telecommunications.

System Disturbance Time: The time between fault inception and CB contacts making on successful reclosure.

system identification : system identification a field of control engineering dealing with the derivation of mathematical models for the dynamics of processes, often by a detailed study of its in-put and output signals. It includes the design of experiments for enhancing the accuracy of the models.

System Impedance Ratio: The ratio of the power system source impedance to the impedance of the protected zone.

system implementation : system implementation a phase of soft-ware development life cycle during which a software product is integrated into its opera-tional environment.

System integrity. : System integrity – the property that a system performs its intended function in an unimpaired manner, free from deliberate or accidental unauthorised manipulation of the system. (ca)

system interaction : system interaction a stream of energy, material, or information exchanged between the sub-systems of a large-scale system. Rel-levant attributes of those streams are, respec-tively, interaction inputs or interaction out-puts).

Interactions are described by the in-teraction equations, which relate interaction inputs to a given subsystem to interaction out-puts from other subsystems.

System interconnection: A physical connection between two electric systems that permits the transfer of electric energy in either direction.

System Noise: Measure of the amount of noise seen by an analog circuit or an ADC when the analog inputs are grounded.

System operator: A qualified person designated to operate the system or its parts.

System operator (electric): An individual at a control center (Balancing Authority, Transmission Operator, Generator Operator, Reliability Coordinator) whose responsibility it is to monitor and control that electric system in real time.

system peak demand : The highest demand value that has occurred during a specified period for the utility system.

System Performance and Evaluation Co-operative (SPEC) : System Performance and Evaluation Co-operative (SPEC) a cooperative formed by four companies, Apollo, Hewlett-Packard, MIPS, and Sun Microsystems, to evaluate smaller computers.

System Pressure: See OPERATING PRESSURE.

System Sand: Foundry sand used in making molds and which eventually becomes the bulk of the sand used in the mechanical system or mechanized unit. See also Sand

System Start: Button on the oil system's control panels which is pushed after the pump selections have been made in order to start the system.

System Stop: Button on the oil systems' control panel that is pushed to shut down the system.

system transfer function : system transfer function the result of sending a known test signal (often an impulse function or sine wave) through a system and defines what a system will do when presented with an input signal. Test signals often must be varied in frequency since system trans-fer functions are often frequency dependent (e.g., a stereo amplifier or speakers).

system with memory : system with memory a system whose out-put at time t depends on the input at other times (and possibly including) that instant t. If the output of the system at time t depends only on the input to the system at time t the system is said to be memoryless.

System x.: Spc public telephone exchange technology developed in the uk and now deployed in most of the uk pstn.

system : An electrical system consisting of a single source of electrical energy and an installation. For certain purposes of the Regulations, types of system are identified as follows, depending upon the relationship of the source, and of exposed conductive parts of the installation, to Earth.

systematic code : systematic code a code for which the information sequence itself is a part of the coded sequence. For block codes, it is com-mon to assume that the information sequence is the first (or last) part of the codeword.

System-high security mode of operation. : A security mode of operation in which all individuals with access to the data processing system or network are cleared to the highest classification level of information stored, processed or transmitted within the data processing system or network, but not all individuals with access to the data processing system or network have a common need-to-know for the information stored, processed or transmitted within the data processing system or network

Systems control point, technical. : The place at which those facilities/circuits/ technical control installations and activities telecommunications are situated.

systems engineering : systems engineering an approach to the overall life cycle evolution of a product or system. Generally, the systems engineering process comprises a number of phases. There are three essential phases in any systems en-gineering life cycle: formulation of require-ments and specifications, design and devel-opment of the system or product, and deploy-ment of the system. Each of these three basic phases may be further expanded into a larger number. For example, deployment gener-ally comprises operational test and evalua-tion, maintenance over an extended opera-tional life of the system, and modification and retrofit (or replacement) to meet new and evolving user needs.

t: tenth

T: trillion 10¹²

T: Thermoplastic vinyl, building wire. 60°C

T&D: Transmission and Distribution.

t1 timer. : (in x25 packet-switched networks) used to measure timeout intervals in link initialization and data exchanges.

T1.: A 1.544 (in the USA and Japan) or 2.048 (elsewhere) Mbps bandwidth, data communications facility available in many versions, 2 of which are: formatted (accunet is a formatted T1 offering), which requires compliance with both AT&T DSX-1 hardware and DS-1 software standards; and unformatted, which only requires compliance with the DSX-1 standard. (The formatted version provides less usable bandwidth.)

T101: Term used for IEC 608705101 protocol.

Ta: Chemical symbol for Tantalum

TA: Switchboard wire, thermoplastic and asbestos insulation. 90°C

TAA: Flexible nickel or nickel-clad copper, PTFE tape, felted asbestos, asbestos braid. 200°C

Table Mill: In ring rolling, a type of ring forging equipment employing multiple mandrels with a common main roll. Usually used in high volume production of small diameter rolled rings.

Table Test: A quality test taken to visually inspect the plate.

tableau formulation : tableau formulation a method for formulating the equations governing the behavior of electrical networks. The tableau method simply groups the KVL, KCL, and branch relationships into one huge set of equations.

taboo channels : taboo channels channels that the FCC does not currently assign in order to avoid interference from adjacent channels.

Taboo frequency. : A frequency on which jamming or other interference is prohibited. See protected frequency.

Tacan (tactical air navigation system) (1). : An ultra-high frequency electronic air navigation system which provides a continuous indication of bearing and slant range to the Tacan station. The term is derived from tactical air navigation.

Tacan (tactical air navigation system) (2). : A navigation aid, measuring distance and bearing from the transponder type directional beacon. The craft carries a pulsed interrogating transmitter, a receiver and display equipment. The combined receive-transmit radiation pattern of the beacon rotates continuously about a vertical axis and the phase-characteristics of the amplitude modulation so imposed on the transmitted pulses carries the bearing information.

Tach Roll: Roll used for measuring line speed.

Tachogenerators: A tachogenerator is a device for measuring the rotational speed of a shaft by correlating speed to the voltage produced by a small generator attached to the shaft.

tachometer: An instrument for measuring speed (rpm) of a rotating shaft.

Tachometer: An instrument used to measure the rotations per minute of a rotating shaft. It is used to measure running kilometers of automobiles and also used in many other machines to count rotations of shafts.

tachometer : tachometer a instrument used to measure the speed of a rotating device. Several types of tachometers are available. Friction devices are placed against the shaft of the device being measured. Others used magnetic variation or reflected light pulses to determine the speed. Tachometer generators are mounted on the shaft of the device being measured and provide a voltage proportional to the speed. Tach generators are often used in servo systems.

Tachometer Gauges: A Tachometer Gauge is used to measure rotational speed, typically on revolutions per minute.

tachometer-generator : tachometer-generator a small generator that is connected to the shaft of a rotating machine and produces an output voltage directly proportional to the rpm of the machine. Typically used for closed-loop speed control.

Tack Welds: Small scattered welds made to hold parts of a weld in proper alignment while the final welds are being made.

Tackiness: A coating defect consisting of a stickiness of a cured coating. Blocking is caused by tackiness.

Taconite: Natural mineral containing less than 30% iron. It is the primary ore used in blast furnaces. Domestic supplies of iron rich ores (greater than 50% iron) were largely depleted in the 1940s, so integrated steel companies now process the lower grade taconite to make it useful.

tag : tag (1) that part of a memory address held in a direct mapped or set associative cache next to the corresponding line, generally the most significant bits of the address. (2) a field attached to an object to denote the type of information stored in the object. The tag can flag control objects to prevent misuse. Tags can be used to identify the type of each object and thereby to simplify the instruction set, since, for example, only one ADD instruction would be necessary if each numeric object were tagged with its type (integer vs. real, for example). (3) a temporary sign which is affixed to a network device to identify particular instructions. An example of this might be placing a tag which indicates "Do Not Close" on a circuit breaker which has been opened to permit downstream work.

Tag Line: A rope used to control the position of equipment being lifted. This is not to be confused with the rope used to actually lift the equipment.

tagged image file format (TIFF) : tagged image file format (TIFF) a popular image-file format that is very flexible. TIFF can hold compressed or uncompressed images, or different types of pixels, and is usable on different operating systems. See also file format, image compression, Lempel-Ziv-Welch coding.

Tail: Slag that has cooled to a solid phase at the spout.

tail biting : tail biting a frame-by-frame transmission scheme for which the data is convolutionally encoded so that the encoder begins and ends in the same state, which, however, is unknown to the decoder. The advantage of this scheme is that

no tail (overhead) is added to the data to force the encoder into a (by the de-coder) known state. Compare with fractional rate loss.

Tail circuit. : A feeder circuit to a network node; normally a leased line.

Tail End: 1) The balance of the coil removed from the entry end. 2) The portion of the coil that makes up the inner diameter on the entry reels and the outer diameter on the delivery reels.

Tail Mark: See ?Mark, Roll Bruise?.

Tailgate: The outlet of a natural gas processing plant where dry residue gas is delivered or re-delivered for sale or transportation.

Tailing Heat: Heat cycle setting on the welder for the end of the weld.

Tailings: The end product or waste of ore mining, usually piled up in close proximity of a mining area. Some will often contain some metal that can be extracted.

Tailings: The remaining portion of a metal-bearing ore consisting of finely ground rock and process liquid after some or all of the metal, such as uranium, has been extracted.

Tailings: Ground rock remaining after particular ore minerals (e.g., uranium oxides) are extracted.

Tailored Blanks: A section of sheet or strip that is cut to length and trimmed to match specifications for the manufacturer's stamping design for a particular part. Because excess steel is cut away (to save shipping costs), all that remains for the stamper is to impart the three dimensional shape with a die press (see Blanking).

Tails: Depleted uranium, with about 0.3% U-235.

Takagi–Sugeno–Kang fuzzy model : Takagi–Sugeno–Kang fuzzy model a fuzzy model that was studied by Takagi, Sugeno, and Kang. It is called the TSK or just TS fuzzy model, and it can be viewed as a special case of SAM. See also fuzzy system.

Take Up: Steel block where material is wound when rolling or slitting.

Take-Up: The process of accumulating wire or cable onto a reel, bobbin, or some other type of package. Also refers to the device utilized for pulling wire or cable through a piece of equipment or machine.

Tall oil: The oily mixture of rosin acids, fatty acids, and other materials obtained by acid treatment of the alkaline liquors from the digesting (pulping) of pine wood.

TAME: See Tertiary Amyl Methyl Ether.

Tamper Resistant: A receptacle which by its construction limits improper access to its energized contacts.

Tandem: A wall plate in which individual gangs are arranged vertically one above the other.

Tandem Mill: A cluster of rolling mills where mill stands are in tandem. At WSC, this terminology generally refers to WSC's cold reducing mills.

Tandem operation. : Electrically or mechanically coupled two crypto equipments to produce locally automatic decryption simultaneous with encryption.

Tandem switch. : A manual or automatic switch connecting the output terminals of one trunk circuit to the input terminals of another trunk circuit, thereby connecting both circuits in tandem.

Tangential Sprays: Sprays that cool down exhaust heat before it enters the scrubber duct work.

Tangible development costs: Costs incurred during the development stage for access, mineral-handling, and support facilities having a physical nature. In mining, such costs would include tracks, lighting equipment, ventilation equipment, other equipment installed in the mine to facilitate the extraction of minerals, and supporting facilities for housing and care of work forces. In the oil and gas industry, tangible development costs would include well equipment (such as casing, tubing, pumping equipment, and well heads), as well as field storage tanks and gathering systems.

tank : tank the container for the coils and core of a transformer, which is usually oil-filled for insulation and cooling.

Tank farm: An installation used by trunk and gathering pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

Tank Level Control Systems: A Tank Level Control System refers to a set of process controls used to monitor and maintain the fluid level in a storage or holding tank.

Tank Line: Any hose, pipe or tube used to carry a fluid from a system to the system's storage tank.

Tank Pressure Control: Tank Pressure Control is a system of valves, sensors and controllers for automatically maintaining pressure in a holding tank.

Tank Pumping System: A Tank Pumping System is used to remove fluids and suspended solids from a holding tank; for example, a septic tank.

Tank Test: A term used to describe a voltage dielectric test where the specimen to be tested is submerged in a liquid (usually water) and a voltage potential applied between the conductor and the liquid as ground.

Tanker and barge: Vessels that transport crude oil or petroleum products. Note Data are reported for movements between PAD Districts; from a PAD District to the Panama Canal; or from the Panama Canal to a PAD District.

Tantalum: A rare metal of silver white color having excellent corrosion resistance and a high melting point. It is widely used for chemical process equipment and specialised aero space and nuclear applications.

Tantalum Heat Exchangers: A Tantalum Heat Exchanger is used to transfer heat between two fluids in a corrosive environment. Tantalum is highly corrosion resistant.

tap : tap a connection (actually one of several) to a coil, allowing the number of turns in the coil to be varied.

Tap Changer: A mechanism usually fitted to the primary winding of a transformer, to alter the turns ratio of the transformer by small discrete amounts over a defined range.

tap changer : tap changer a device to change the tap setting on a transformer coil, allowing volt-age control. See also tap, tap changing under load.

tap changing under load (TCUL) : tap changing under load (TCUL) a type of transformer in which the output voltage can be adjusted while the load is connected to the transformer. The voltage is adjusted by changing the turns ratio of the primary and secondary coils. That, in turn, is accom-plished by bringing out connections (taps) at several points on the coil. Changing from one tap to another either adds or subtracts turns from the coil and raises or lowers the voltage, respectively.

Tap Out System: System which includes the tap out box, Venturi (dough nut), sluice ditch, and ash collection box. Here the hot slag is tapped off of the bottom of the boiler and collected in the ash box for further processing

Tap. : (in cable-based lans) a connection to the main transmission medium.

tape automated bonding (TAB) : tape automated bonding (TAB) a man-ufacturing technique in which leads are punched into a metal tape, chips are attached to the inside ends of the leads, and then the chip and lead frame are mounted on the MCM or PCB.

Tape copy. : A message in tape form which is the result of transmission.

Tape Measure: Tool used to measure the width of the coil.

Tape relay, automatic. : A system of tape relay which embodies automatic switching. Replaced by the term "message relay".

Tape relay, semi-automatic continuous tape (switching). : A method of teletypewriter operation whereby incoming messages are received in continuous printed/perforated tape and given onward electrical transmission according to routing requirements through the push button panel connection of a transmitter distributor into the appropriate outgoing channel(s).

tape relay, torn tape. : A message relay system in which the perforated tape is transferred by an operator to the appropriate automatic transmitter position.

Tape relay. : A system of retransmitting traffic from one channel to another in which messages arriving on an incoming channel are recorded in the form of perforated tape, this tape being fed into an automatic transmitter on an outgoing channel.

tape skew : tape skew misalignment of magnetic tape during readout, leading to a difference be-tween bits positions as written and as rec-ognized for reading. Generally not a serious problem for low recording density or low tape speed; otherwise, a correction is required, e.g., by the use of "deskewing buffers."

Tape Wrap: A term denoting a spirally or longitudinally applied tape material wrapped around the wire, either insulated or uninsulated, used as an insulation or mechanical barrier.

Tape, chad. : A tape used in printing telegraphy/teletypewriter operation. The perforations are severed from the tape making holes representing the characters. The characters are not normally printed on chad tape.

Tape, chadless. : Punched tape that has been punched in such a way that chad is not formed.

Tape, wheatstone (boehme). : Tape used for automatic (machine) transmission and reception of international morse code.a. For transmission. A tape providing for two unit perforation i.e. Two holes perforated vertically equal a dot and two holes perforated obliquely equal a dash.b.)Ink recording tape. A tape drawn through an ink recorder, the flinger of which draws a continuous ink line. Dots or dashes are indicated by fluctuations in the ink line.

Taper: The shape uniformly going narrow toward the ends.

Taper Lock Pulleys: A Taper Lock Pulley is pulley that is secured to a rotating shaft with a tapered hub. The taper prevents the pulley from being pulled off of the shaft. Taper Lock Pulleys are preferred choice when absolute alignment between pulleys is not possible.

Taper Section: A section made at an acute angle to a surface of interest, thereby achieving a geometrical magnification of depth. A sectioning angle 5(degrees) 43 achieves a depth magnification of 10: 1.

tapered mirror: tapered mirror mirror in which the re-flection profile varies across the mirror sur-face; useful for discriminating against high-order transverse modes in a resonator. See also variable reflectivity mirror .

Tapered Roller Bearings: Tapered Roller Bearings are bearings which can withstand both thrust and radial forces. The inner and outer races are conical. The rollers are also cone shaped. This arrangement maximizes the contact surface in the bearing.

tape-wound core : tape-wound core a ferromagnetic core constructed by winding ribbon-like steel in-stead of stacking thicker, punched lamina-tion. Usually used for higher frequency de-vices, or where it is desired to reduce the eddy current losses.

tapped delay line : tapped delay line a realization of a digital filter which represents a unit time delay by unit spatial difference in a transmission line.

Tapping: Transferring molten metal from melting furnace to ladle.

Tapping Chucks: Tapping Chucks are tool holders for holding taps in drill press, milling machine, or other spindle. A tap must be have its rotation reversed to safely remove it from a hole with out damaging the threads or breaking the tap. There are several different styles. An auto-reversing chuck has a mechanical clutch which reverses the direction of the tap without reversing spindle direction. A floating tapping chuck has built in axial float to accommodate reversal of the spindle direction.

Tapping Out: The process of removing molten slag from the bottom of a boiler.

Tar sands: Naturally occurring bitumen-impregnated sands that yield mixtures of liquid hydrocarbon and that require further processing other than mechanical blending before becoming finished petroleum products.

Target: The object to be detected.

Target acquisition. : The detection, identification and location of a target in sufficient detail to permit the effective employment of weapons.

target market : A specific group of people or geographical area that has been identified as the primary buyers of a product or service.

Target reflectivity. : The degree to which a target reflects electromagnetic energy.

Target tracking and illuminating radar. : A radar used to track a selected target and at the same time provide illumination to enable a missile to home on the selected target.

Tariff: A published volume of rate schedules and general terms and conditions under which a product or service will be supplied.

tariff : A document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule or prices, under which utility services will be provided.

Tariff. : The published schedule of rates for specific equipments, facilities, or services offered by a common carrier; also, the vehicle by which regulatory agencies approve the rates. Thus, a contract between the customer and the common carrier.

Tarnish: Surface discoloration on a metal, usually from a thin film of oxide or sulfide.

Tarnish: A term used to describe a discolored or stained conductor or shield wire caused by exposure to the atmosphere.

TAS: Shielded thermoplastic appliance wire.

Tax-cost: A deduction (allowance) under U.S. Federal income taxation normally calculated under a formula whereby the adjusted basis of the mineral property is multiplied by a fraction, the numerator of which is the number of units of minerals sold during the tax year and the denominator of which is the estimated number of units of unextracted minerals remaining at the end of the tax year plus the number of units of minerals sold during the tax year.

Tb, terabyte (1012b). : A measure of computer storage capacity.

TBA: See Tertiary Butyl Alcohol

T-Body: A device used to terminate main feeder cables operating at medium voltages (435KV nominal). TBodies are molded from synthetic rubber and are electrically shielded. They are frequently stacked for multiple terminations and are rated at 600 Amps.

T-bracket: T-bracket a metal frame which holds a lightning arrester and a cut-out to the top of a utility pole.

TBS: Switchboard wire, thermoplastic insulation, flame-proof cotton braid. 600V, 90°C

TBWP: Three cotton braids, weatherproof saturated. No voltage rating.

TC: Tray cable Art 340 NEC

TC57: Technical Committee 57 working for the IEC and responsible for producing standards in the field of protection (e.g. IEC 61850)

Tcam, telecommunications access method. : An ibm software routine; the telecommunications access method for 3270 control. See display screen following field.

TCP/IP: Transmission Control Protocol/Internet Protocol. TCP/IP is the method by which data is sent across the internet. These two protocols were developed by the U.S. military to allow computers to talk to each other over long distance networks

Tcp/ip, transmission control protocol/internet protocol. : (in lan technology) a communications protocol for internetwork routing and reliable message delivery; endorsed by the dod and found in arpanet. Tcp/ip functions at the 3rd and 4th layers of the osi model.

tcu, transmission control unit. : A control unit (such as an ibm 2703) whose operations are controlled solely by programmed instructions from the computing system to which the unit is attached; no program is stored or executed in the unit. Contrast with communications control unit.

Td, transmitted data. : An rs-232 data signal (sent from dte to dce on pin 2).

Tdm, time-division multiplexor. : A multiplexor which apportions the time available on its composite link between its channels, usually inter-leaving bits or bytes or data from successive channels.

Tdma, time-division multiple access. (1): (in lan technology) a high-speed, burst mode of operation that can be used to interconnect lans; first used as a multiplexing technique on shared communications satellites.

Tdma, time-division multiple access. (2): A method of several independent sources using one bandwidth at the same time. Restricted to digital transmissions, the bandwidth is used by all users on a time-sharing basis. The access period (or time slots) need not be of equal duration.

Te: Chemical symbol for Tellurium.

teaching-by-showing programming : teaching-by-showing programming a programming technique in which the operator guides the manipulator manually or by means of a teach pendant along the desired motion path. During this movement, the data read by joint position sensors (all robots are equipped with joint position sensors) are stored. During the execution of the motion (playing back), these data are utilized by the joint drive servos. Typical applications of this kind of programming are spot welding, spray painting, and simple palletizing. Teaching-by-doing does not require special programming skill and can be done by a plant technician. Each industrial robot is equipped with these capabilities. Also called teaching-by-doing.

team decision : team decision decision taken independently by several decision makers being in charge of a given process (or a decision problem) and forming a team, i.e., contributing to a commonly shared goal.

Tear Test: A test to determine the tear strength of an insulating material.

tebi (Ti): Binary multiple prefix corresponding to terabinary or 240 or (210)⁴ or 10244. [IEC 1998]

Technical Illustration: A Technical Illustration is a drawing that is used to show function of a device - often mechanical or electrical. They are often used to augment a written description of a complex system.

Teeming: Pouring molten metal from a ladle into ingot molds. The term applies particularly to the specific operation of pouring either iron or steel into ingot molds.

tee-structured VQ : tee-structured VQ A method for structured vector quantization, where the input signal is successively classified and coded in a manner described by a mathematical structure known as a "tree."

TEGFET : TEGFET See high electron mobility transistor.

Telecommunication. : Any transmission, emission or reception of signals, signs, writing images and sounds, or intelligence of any nature by wire, radio, visual or other electromagnetic systems.

telecommunications: The communication of signals, data, sounds or images over a distance by wire and wireless transmission.

Teleconference. : A conference between persons remote from one another but linked by a telecommunication system.

Telegram. : Documentary matter, in written, printed or pictorial form entrusted to a telegraph service for transmission and delivery to an addressee. Note. The telegram includes the document entrusted to the telegraph service or delivered to the addressee. See radiotelegraph.

telegraph: A method of transmitting messages over a distance using electrical impulses sent through wires, using the morse code.

Telegraphy (1). : A form of telecommunications which is concerned in any process providing transmission and reproduction at a distance of documentary matter, such as written or printed matter or fixed images, or the reproduction at a distance of any kind of information in such a form. Unless otherwise stated, telegraphy shall mean a form of telecommunication for the transmission of written matter by the use of a signal code. This does not include pulse code modulation (pcm) telephony.

Telegraphy (2). : In the modern context, telegraphy generally refers to low speed (less than 200 bits/s) message and data communications using dedicated low grade circuits and/or telex network.

Telegraphy, automatic. : Any method of telegraph operation in which, by the use of automatic apparatus, the manual operations involved are effectively reduced or eliminated.

telegraphy, four-frequency duplex.: See four-frequency duplex telegraphy.

Telegraphy, frequency-shift. : See frequency-shift telegraphy.

Telegraphy, manual.: Any method of telegraph operation in which the signal elements are formed individually by an operator from his knowledge of the code and simultaneously transmitted.

Telegraphy, morse. : Alphanumeric telegraphy using the morse code.

Telegraphy, mosaic. : Telegraphy in which the characters are formed as mosaics made up from units transmitted as individual signal elements.

Telegraphy, voice frequency (vftg). : A telegraph transmission within a telephone type channel using frequency division multiplexing.

telemetering: The transmission of measuring, alarm and control signals to and from remote station controls and a central monitoring location.

Telemetering. : Automatic radio communication, in a fixed or mobile service, intended to indicate or record a measurable, variable quantity at a distance.

Telemetry (electric): The process by which measurable electrical quantities from substations and generating stations are instantaneously transmitted to the control center, and, by which, operating commands from the control center are transmitted to the substations and generating stations. NERC definition

Telemetry (1). : Transmission of coded analogue data, often real-time parameters, from a remote site.

Telemetry (2). : Coded state-of-health transmission from a satellite to a spacecraft operations facility.

Telephony/voice. : A form of telecommunication primarily intended for the exchange of information in the form of speech.

telepoint : telepoint a generic term used to describe public-access, cordless, telephone systems.

Teleprinter (teletypewriter). : A start-stop apparatus comprising an alphanumeric keyboard transmitter with a printing character receiver.

Teleprinter exchange service (twx or telex). : A worldwide commercial, low speed data service, permitting teletypewriter communications on the same basis as the telephone service, operating through switchboards. This service is limited to subscribers as in the telephone service.

Teleprinter. : A terminal without a crt that consists of a keyboard and a printer.

Teleprinter-on-multiplex (tom). : Similar to tpr but adapted for a multiplex circuit.

Teleprinter-on-radio (tpr). : A designation for a particular system of conversion of the 5 unit teleprinter code to 7 or more units for radio transmission so as to permit automatic error detection at the receiving terminal and automatic rq.

teleprocessing. : A form of information handling in which a data processing system utilizes communication facilities. (originally, but no longer, an ibm trademark). Synonymous with data communications.

Telescoped: Term given when the winding of a coil gradually becomes concave or convex.

Telescoping: Transverse slipping of successive layers of a coil so that the edge of the coil is conical rather than flat.

Telescoping Coil: A coil that has not wound properly whose sidewall protrudes out. Tension problems or a bad start on the

exit reel causes this condition.

Teletex. : The ccitt standard for text and message communications which was intended to replace telex. Teletex operates at a high speed (2400 bps), can accommodate upper and lower case characters and has a well defined format for transmission and presentation of text.

Teletype, teletype corporation (1). : A contraction of “teletypewriter”, the teletype was a simple hard copy terminal which was widely used as a computer terminal prior to the advent of the visual display unit.

Teletype, teletype corporation (2). : A manufacturer of teleprinters.

Television: the devices used for telecommunication t transmittes the informations in the form of sound with running images.

Tellurium: Its main use in the steel industry is as an additive in leadbearing freecutting steels to further improve their machinability. Its presence in the steel is either within the manganese sulphide paarticle where it is parially soluble, or as particles combined with lead or manganese. For certain applications it offers significant improvements in machinability but the added cost is a factor that should be taken into account.

TEM00 mode : TEM00 mode term sometimes used to de-scribe the fundamental Gaussian beam mode, though this mode has small longitudinal com-ponents of the electric and magnetic field vec-tors.

Temper: A condition produced in a metal or alloy by mechanical or thermal treatment and having characteristics structure and mechanical properties. A given alloy may be in the fully softened or annealed temper, or it may be cold worked to the hard temper, or further to spring temper. Intermediate tempers produced by cold working (rolling or drawing) are called quarter hard, half hard and three quarters hard, and are determined by the amount of cold reduction and the resulting tensile properties. In addition to the annealed temper, conditions produced by thermal treatment are the solution heat treated temper and the heat treated and artificially aged temper. Other tempers involve a combination of mechanical and thermal treatments and include that temper produced by cold working after heat treating, and that produced by artificial aging of alloys that are as cast, as extruded, as forged and heat treated, and worked.

Temper: The softness of a metal; terms such as softdrawn, dead soft, annealed, and semiannealed are used to describe tempers used for conductor metals.

Temper Brittleness: Brittleness that results when certain steels are held within, or are cooled slowly through, a certain range of temperature below the transformation range. The brittleness is revealed by notched bar impact tests at or below room temperature.

Temper Code: Industry standard code that indicates the hardness of the steel.

Temper Colors: Before the use of instruments such as pyrometers, colors were used to judge temperature when hardening and tempering. For example, on carbon tool steel where the tempering range may typically be from 200oC to 350oC, the color change with the rise in temperature giving light straw at around 210oC, Purple 275oC, and Grey at 330oC, The practice wlll continues in workshops where controlled heat treatment facilities are not available.

Temper Mill: A relatively light cold rolling operation that may be used on hot rolled, cold rolled and some coated steel such as galvanized. Temper rolling hot rolled sheet helps to improve flatness, minimize coil breaks and fluting and alter mechanical properties. Temper rolling cold reduced and coated sheet steel improves surface finish, alters mechanical properties and reduces the tendency of the steel to flute during fabrication.

Temper Rolled: A product that has been processed at the Temper Mill.

Temper Rolling: Subjecting metal sheet or strip to a slight amount of cold rolling following annealing (usually 1/2 to 1 1/2%) to forestall stretcher strains. Also termed Pinch Pass or Skin Rolled.

Temper Stressing: Quenching in water from the tempering temperature to improve fatigue strength.

Temper Variation: Considered a defect when variation of the hardness or forming properties of single reduced plate as generally compared to the temper designation of the plate.

temperate plasma : temperate plasma a preferred term used to describe the “cold plasma” to convey the following limits on the thermal velocity of the electrons. The electron thermal velocity is much less than the phase velocity of the wave in the medium but much greater than the induced velocity increments produced by the electromagnetic fields.

Temperature coefficient (of a solar photovoltaic cell): The amount that the voltage, current, and/or power output of a solar cell changes due to a change in the cell temperature.

temperature coefficient of resistance : temperature coefficient of resistance the change in electrical resistance of a resistor per unit change in temperature.

Temperature Coefficient of Resistivity: The amount of resistance change of a material per degree of temperature rise.

Temperature Controllers: A Temperature Controller is used to maintain a desired temperature or range of temperatures via electronic control. Typical features include multiple programmable set points and minimum/maximum operating range.

Temperature Data Loggers: A Temperature Data Logger is a device for recording temperatures over time. Its often used as part of a process control system for forecasting.

Temperature Meters: A Temperature Meter is a device used to display temperature. Temperature meters can be interfaced with sensors in a remote location via wired or wireless signal transmission and are common in process control applications.

Temperature Rise: The increase in temperature that results when electrical load is carried by electrical equipment.

Temperature Sensor: The sensor used to report the detect the heat of the local area.

Temperature Sensor: The sensor made up of smart materials used to measure the heat.

Temperature Sensors: A temperature sensor is used to determine temperature. Common sensor technologies are

thermocouples, RTD (Resistive Temperature Detectors), and thermistors.

Temperature Stress: The maximum stress which can be applied to a material at a given temperature without physical deformation.

Temperature Switch: The mechanisms used to measure temperature. It works on the variation of temperature into an enclosed space.

Tempered Martensite: Martensite that has been heated to produce a BCC iron and a fine dispersion of iron carbide.

Tempered Spring Steel Strip: Any medium or high carbon (excluding clock spring) strip steel of spring quality which has been hardened and tempered to meet specifications. Where specification calls for blue or straw color, same is accomplished by passing through heat prepared at proper temperature depending on color required. Blue is developed at approximately 600 (degrees) F.

Tempering: Also known as drawing, the process by which steel or iron is softened by reheating it at a considerably lower temperature than that at which its previous hardening was done.

Tempest. : A codeword referring to the investigation, study, and control of compromising emanations from information processing equipment. Phenomenon of unintentional emanation of compromising electrical signals from an equipment, system or unit.

template : template a pattern, often in the form of a mask, that can be used to locate objects and features in an image. For large objects which might appear in many orientations, this procedure is very computation intensive, and it is normal to use small templates to search just for features, and then infer the presence of the objects. Template matching is commonly performed for tasks such as edge detection and corner detection.

template mask : template mask a mask that forms a pixelated template of an object or feature, and which may then be used for template matching. See also template.

template matching : template matching a technique in which a model and an optimization method are used to deform a template to a study in order to find the best match for the purpose of detection or recognition.

temporal alignment : temporal alignment the process of aligning two sequences by using dynamic programming.

temporal averaging : temporal averaging averaging a signal in the time domain. For discrete signals, temporal averaging by a finite impulse response filter is a way to smooth out the signal.

temporal frequency : temporal frequency a frequency that represents the change of an image with time; temporal frequency components can result from motion between completed images or from the methods used to construct a complete image. A monochrome interlaced television frame requires two (2) fields or 30 Hz temporal frequency in constructing a complete monochrome television frame. Similarly, the NTSC color subcarrier frequency is interlaced with the horizontal line frequency and creates a 15 Hz temporal frequency component to the color television frame.

Temporarily discharged fuel: Fuel that was irradiated in the previous fuel cycle (cycle N) and not in the following fuel cycle (cycle N+1) and that will be irradiated in a subsequent fuel cycle.

temporary fault : temporary fault a fault that will not re-occur if the equipment is deenergized and then reenergized. An example of a temporary fault is when a lightning stroke causes an uninsulated overhead line to arc over an insulator, with no equipment damage.

temporary interruption : temporary interruption a loss of voltage of less than 0.1 pu for a duration of 3 seconds to 1 minute.

Tennessee Valley Authority (TVA): A federal agency established in 1933 to develop the Tennessee river valley region of the southeastern U.S.

Tensile Strength: The greatest longitudinal force that a substance can bear without tearing apart or rupturing; also called ultimate tensile strength.

Tensile Strength: A term denoting the greatest longitudinal tensile stress a substance can bear without tearing apart or rupturing.

Tensile Stress: Torque per unit cross-sectional area applied to elongate a material.

Tensile Test: A destructive mechanical test whereby strength and ductility properties are measured.

Tension: The force in pounds or kilograms on a conductor installed overhead. Too much tension on an overhead line can contribute to mechanical failure.

Tension: The pulling force exerted by each end of a string is called tension.

Tension Level: Stamco Leveler in #5 Galvanized line levels the steel.

Tension Set: The condition when a plastic material shows permanent deformation caused by stress, after the stress is removed.

tera (T): Decimal multiple prefix corresponding to Trillion (US) or 10¹².

Terawatt-hour: One trillion watt hours.

Term agreement: Any written or unwritten agreement between two parties in which one party agrees to supply a commodity on a continuing basis to a second party for a price or for other considerations.

Terminal: A connection point for electrical components or conductors.

Terminal: A terminal is a fixed location on a wiring device where a conductor is intended to be connected.

Terminal (1). : Any device capable of sending or receiving data over a data communications channel.

Terminal (2). : Communication facilities which constitute a point of origin and/or termination of a circuit/channel.

terminal block : An insulating base equipped with terminals for connecting wires.

Terminal Blocks: A terminal block is a component mounted to a printed circuit board for the purpose of connecting multiple

wires together. There are many different types of terminal blocks and the selection is based on the number of wires being connected at both the input and output and the type of termination required. Typical termination options are screw clamps, spring clamps, tab/blade terminals and insulation displacement connections.

Terminal control unit. : See cluster control unit.

Terminal instrument. : A telecommunications device, which provides a point of origin and/or termination of a circuit/channel.

Terminal location: The physical location of one end of a transmission line segment.

Terminal server. : (in lan technology) a device that allows one or more terminals or other devices to connect to an ethernet.

Terminal Strips: Terminal Strips, also known as terminal blocks, are used to interface electronic devices, most often inside a electrical cabinet or enclosure. Discrete wires are connected via many methods, including screws terminals, quick connects, solder.

Termination: 1) The act of preparing the connection or transition of an insulating cable. 2) The device that transitions an underground cable to an overhead cable or wire.

termination : termination a circuit element or device placed at the end of a transmission line that reflects and/or absorbs signal energy.

Terminator: A device used to transition between overhead and underground, medium and high voltage conductors.

Terminator: the device or equipment used to terminate the circuit which is closing the loop.

terminator : terminator (1) a device connected to the physical end of a signal line that prevents the unwanted reflection of the signal back to its source.(2) a data item in a stream that marks the end of some portion or all of the data.

Ternary Alloy: An alloy that contains three principal elements.

ternary logic : ternary logic digital logic with three valid voltage levels.

Terne Plate: Sheet steel, coated with a lead tin alloy. The percentage of tin is usually kept as low as possible because of its high cost; however, about 15% is normally necessary in order to obtain proper coating of the steel, since pure lead does not alloy with iron and some surface alloying is necessary for proper adhesion.

Terrain avoidance system. : A system which provides the pilot or navigator of an aircraft with a situation display of the ground or obstacles which project above either a horizontal plane through the aircraft or a plane parallel to it, so that the pilot can manoeuvre the aircraft to avoid the obstruction.

Terrestrial sequestration: Biotic sequestration of carbon in above- and below-ground biomass and soils.

Tertiary amyl methyl ether - (CH₃)₃COC₂H₅ - (CH₃)₃COC₂H₅ An oxygenate blend stock formed by the catalytic etherification of isoamylene with methanol.

Tertiary butyl alcohol - (CH₃)₃COH - (CH₃)₃COH An alcohol primarily used as a chemical feedstock or a solvent or feedstock, for isobutylene production for MTBE (methyl tertiary butyl ether) and produced as a co-product of propylene oxide production or by direct hydration of isobutylene.

tertiary winding : tertiary winding a third winding on a transformer. A tertiary winding may be used to obtain a second voltage level from the transformer. For example, in a substation it may be necessary to have low voltage power for the substation equipment in addition to the distribution voltage. Another application of a tertiary winding is in a wye-wye three-phase transformer. Here the tertiary is connected in delta, to provide a path for the triple harmonic components of the exciting current and prevent distortion of the phase voltages.

Tesla: Tesla is the SI unit of magnetic flux density which is denoted by B and symbolized by T. It is equal to one weber per square meter

tesla : tesla a unit of magnetic flux density equal to one weber per square meter, i.e., one volt-second per square meter.

Denoted by T. The unit is named in honor of Nikola Tesla, an early pioneer in the electric industry, who is most commonly credited with building the first practical induction motor.

tesla (T) : SI unit of magnetic flux density. One tesla is defined as the field intensity generating one newton of force per ampere of current per meter of conductor.

Tesla, Nikola : Tesla, Nikola (1856–1943) Born: Smil-jan, Croatia Tesla is best known as the electrical pi-oneer who championed the use of alternat-ing current. When Tesla first came to the United States he worked for Edison. He soon split with Edison, because Tesla ap-proached invention from a theoretical stand-point, whereas Edison was a “trial and er-ror” type experimentalist. Together with his financial backer, George Westinghouse, they battled with Edison, who championed the use of direct current for electrifying the world. Tesla is also known for his many in-ventions including the Tesla coil and the AC induction motor. It was Westinghouse who made a fortune from Tesla's inventions. Tesla was known for his eccentricities and died a recluse in New York City.

test access port : test access port a finite state machine used to control the boundary scan interface.

test fixture : test fixture a device or software module that is attached to another device or module so that tests can be run on the unit in question.

Test Flat: A means of testing by coils, for customers who buy by coil. The coil is put on the cutting line, about 100 sheets cut to check flatness, back the coil off, and, determine whether coil will be acceptable to the customer.

Test Gauge: A measuring device used to check hydraulic pressure in different components of a hydraulic system.

Test Lug: An ear like projection cast as part of the casting and later removed for testing purposes.

test pattern : test pattern input vector such that the faulty output is different from the fault-free output.

test point : test point (1) a physical contact for a hard-ware device that can be monitored with an external test device. (2) a

data element within a software mod-ule that is accessible to an external test mod-ule.

test register : test register a register used in the proces-sor to ease testing of some functional blocks (e.g., cache memory) by simplifying accesses to their internal states.

Test Reports: The permanent records made by a wire manufacturer of the test performed on a batch of wire to a specification.

test response compaction : test response compaction the process of reducing the test response to a signature. Common compaction techniques use signal transition counting, accumulated addition, CRC codes, etc.

Test Sample: A piece of the strip used by various departments to test or evaluate the quality of the steel. The size and place of the sample taken will vary.

test set : test set specialized sets of instruments used to verify the operation of relays, fault indicators, or other instrumentation.

test vectors : test vectors a test scheme that consists of pairs of input and output. Each input vector is a unique set of 1s and 0s applied to the chip inputs and the corresponding output vector is the set of 1s and 0s produced at each of the chip's output.

Test Water: A boiler water sample taken for a chemical test.

Test well contribution: A payment made to the owner of an adjacent or nearby tract who has drilled an exploratory well on that tract in exchange for information obtained from the drilling effort.

Test, communications. : Any transmission or reception specifically intended to evaluate the efficiency of communications media or facilities.

testability : test-and-set instruction an atomic in-struction that tests a Boolean location and if FALSE, resets it to TRUE. See also atomic instruction.

test-and-set instruction : testability the measure of the ease with which a circuit can be tested. It is defined by the circuit controllability and observability features.

testing: The process of verifying the properties of an equipment by a process of application and measurement.

testing : testing a phase of software development life cycle during which the application is ex-ercised for the purpose to find errors.

testing function : testing function one of a set of functions used in the method of moments to multiply both sides of the integral equation (in which the current has been expanded in a set of ba-sis functions) to form a matrix equation that can be solved for the unknown current coef-ficients.

TEW: Canadian Standards Association type appliance wires. Solid or stranded single conductor, plastic-insulated. 600V, 105°C

Text. : That part of a message which contains the information which the originator desires to be communicated.

textural edgedness : textural edgedness a measure of the mean edge contrast at every position in an image, where the average is taken over a significant region so as to smooth out small scale varia-tions, thereby providing an indication of the type of texture present.

textural energy : textural energy a measure of the amount of statistical, periodic or structural variation at a location in a texture, 'energy' being a suitable square-law unit corresponding to the variance imposed on the mean intensity at that location in the texture.

Texture: In a polycrystalline aggregate, the state of distribution of crystal orientations. In the usual sense, it is synonymous with preferred orientation, in which the distribution is not random.

texture: texture quantitative measure of the vari-ation of the intensity of a surface that can be described in terms of properties such as regu-larity, directionality, smoothness/coarseness, etc.

texture : thermal expansion mismatch the abso-lute difference in thermal expansion of two components.

texture analysis : texture analysis the process of analyz-ing textures that appear at various positions in images. The term also includes the pro-cess of demarcating the boundaries between different textural regions and leads on to the interpretation of visual scenes.

texture modeling : texture modeling the process of modeling a texture with a view to (a) later recognition or (b) generating a similar visual pattern in a graphics or virtual reality display. Textures are usually partly random in nature, and tex-ture models usually involve statistical mea-sures of the intensity variations.

TF: The Transfer Function of a device usually an element of a control system.

TF: Fixture wire, thermoplastic-covered solid or 7 strands. 60°C

TFE: A Heatresistant insulation compound made with tetrafluoroethylene (Teflon).

TFE: Tetrafluoroethylene (also see PTFE)

TFF: Same as TF but flexible standing. 60°C

TFFN: Same as TFF but with nylon sheath

TG: Flexible nickel or nickel-clad copper conductor, PTFE tape, glass braid. 200°C

TGS: Solid or flexible copper, nickel-clad iron or copper, or nickel conductor. PTFE tape, silicone glass braid. 600V, 250°C

th: thousandth

the technical cooperation program (ttcp) : an organization composed of officials from australia, canada, new zealand, the united kingdom and the united states. Its purpose is to enhance national defense at a reduced cost and its aim is to foster cooperation in science and technology among member nations. This ogranisation collaborates in defence scientific and technical information exchange; program harmonization and alignment and shared research ativities for the five nations.

Therm: One hundred thousand (100,000) Btu.

Thermal Actuator: A Thermal Actuator is a device that produces motion as result of material thermal expansion caused by a temperature change.

Thermal Aging: Exposure to a given thermal condition or a programmed series of conditions for prescribed periods of time.

Thermal Alloying: The act of uniting two different metals to make one common metal by the use of heat.

Thermal Analysis: A method of studying transformations in metal by measuring the temperatures at which thermal arrests occur.

Thermal Anemometers: A Thermal Anemometer uses a temperature sensor to measure wind speed. Two temperature sensors are connected in a circuit. A temperature change at one of the sensors resulting from an change in wind speed results in a change in the resistivity of the circuit.

thermal breakdown : Heat is generated continuously in electrically stressed insulation by dielectric losses, which is transferred to the surrounding medium by conduction through the solid dielectric and by radiation from its outer surfaces. If the heat generated exceeds the heat lost to the surroundings, the temperature of the insulation increases leading ultimately to thermal breakdown if a stable temperature is not reached.

Thermal Contraction: The increase in a linear dimension and volume of a material accompanying a change of temperature.

Thermal Control Circuit: The system or circuit used to control the temperature of any device or equipment. It may be external unit or integral unit.

Thermal conversion factor: A factor for converting data between physical units of measure (such as barrels, cubic feet, or short tons) and thermal units of measure (such as British thermal units, calories, or joules); or for converting data between different thermal units of measure. See Btu conversion factor.

Thermal cracking: A refining process in which heat and pressure are used to break down, rearrange, or combine hydrocarbon molecules. Thermal-cracking includes gas oil, visbreaking, fluid coking, delayed coking, and other thermal cracking processes (e.g., flexicoking).

Thermal Effect on Span: The error defined by the change in sensitivity due to a change in ambient temperature within the compensated temperature range.

Thermal Effect on Zero: The error defined by the maximum deviations from the zero due to changes in ambient temperature, within the compensated temperature range and no pressure applied.

Thermal efficiency: A measure of the efficiency of converting a fuel to energy and useful work; useful work and energy output divided by higher heating value of input fuel times 100 (for percent).

Thermal electric: Electric energy derived from heat energy, usually by heating a working fluid, which drives a turbogenerator. See 'solar thermal electric.'

Thermal element: A metallic or nonmetallic fusible material that is part of a thermal cutoff and is responsive to temperature by a change of state at the temperature for which it is calibrated.

Thermal energy storage: The storage of heat energy during utility off-peak times at night, for use during the next day without incurring daytime peak electric rates.

Thermal Expansion: The expansion of a material when subjected to heat.

Thermal Expansion: It is the tendency of materials to change their physical state under change in temperature of material surroundings due to change in kinetic energy.

Thermal Expansion: The expansion of a material when subjected to heat.

Thermal Fatigue: Failure resulting from rapid cycles of alternate heating and cooling.

thermal fin : thermal fin an extension of the surface are in contact with a heat transfer fluid, usually in the form of a cylinder or rectangular prism protruding from the base surface.

Thermal Flattening: Similar to stress relieving in that the metal is passed through a continuous furnace, but tension is also applied elongating the metal to improve over all flatness.

Thermal Insulation: Thermal Insulation is any material that is used as a barrier to heat transfer. Fiberglass, foam, and refractive ceramics are often employed.

thermal light : thermal light light generated by spon-taneous emission, such as when a group of excited atoms or molecules drops to a lower energy state in a random and independent manner emitting photons in the process; con-trasted with laser light.

Thermal limit: The maximum amount of power a transmission line can carry without suffering heat-related deterioration of line equipment, particularly conductors.

Thermal Management: The systematic controlling and maintain the temperature of the unit with cooling and heating devices.

thermal management : thermal management the process or pro-cesses by which the temperature of a speci-fied component or system is maintained at the desired level. Also called thermal control.

Thermal mass: Materials that store heat within a sunspace or solar collector.

thermal mechanism: The thermal mechanism uses a heat sensitive bimetal element to operate the circuit breaker in the event of an overcurrent.

Thermal Monitor: A Thermal Monitor used to monitor the temperature of a Nuclear Reactor by selecting the safe temperature.

thermal neutrons : thermal neutrons neutrons which move at the same velocity as the random thermal motions of the atoms of the ambient medium.

thermal noise: thermal noise a noise process that affects communication channels and electrical cir-cuits which is due to the

random motion of electrons in materials and more specifically resistors. In such a circuit, the resistor produces a level of noise that is proportional to the resistance of the component, the ambient temperature, and the bandwidth of the circuit. Also known as Johnson, Nyquist, or white noise.

thermal ohm: The thermal ohm is the resistance of a path through which a temperature difference of 1 °C produces a heat flow of 1 watt.

thermal overload protector: Device which protects motor windings from excessive temperature by opening a set of contacts.

Thermal Overload Relays: A Thermal Overload Relay protects an electric motor from an overcurrent condition. A common method for doing this employs the use of a bimetal strip. As the strip heats up above a critical temperature, it bends and causes a relay to contact to be broken. This stops current flow to the motor.

Thermal Rating: The maximum and/or minimum temperature at which a material will perform its function without undue degradation.

Thermal rating (electric): The maximum amount of electrical current that a transmission line or electrical facility can conduct over a specified time period before it sustains permanent damage by overheating or before it sags to the point that it violates public safety requirements. NERC definition

Thermal reactor: A reactor in which the fission chain reaction is sustained primarily by slow neutrons, and hence requiring a moderator (as distinct from Fast Neutron Reactor).

thermal reactor : thermal reactor a reactor which maintains a critical reaction with thermal neutrons.

Thermal Resistance: That change in the electrical resistance of a material when subjected to heat. Resistance to heat flow from conductors to outer surface of insulation or sheath in a wire or cable.

thermal resistance : thermal resistance a thermal characteristic of a heat flow path, establishing the temperature drop required to transport heat across the specified segment or surface; analogous to electrical resistance.

Thermal resistance (R-Value): This designates the resistance of a material to heat conduction. The greater the R-value the larger the number.

thermal resistance : Opposition to the flow of heat.

thermal resistivity: The thermal resistivity is the temperature drop in degree celsius produced by the flow of 1 watt between the opposite faces of a metre cube of the material.

Thermal Resistivity: Thermal resistance of a unit cube of material.

Thermal Safety Valves: A Thermal Safety Valve is a valve that is designed to relieve pressure resulting from the volumetric expansion of a heated liquid.

Thermal Shock: Thermal shock is the effect of heat or cold applied at such a rate that non-uniform thermal expansion or contraction occur within a given material or combination of materials. In connectors, the effect can cause inserts and other insulation materials to pull away from metal parts.

Thermal Shock: The resulting characteristics when a material is subjected to rapid and wide range changes in temperature in an effort to discover its ability to withstand heat and cold.

Thermal Spalling: Breaking up of refractory from stresses which arise during repeated heating and cooling.

Thermal Spray Coating: Thermal Spray Coating is a process that used to create a coating by spraying melted material on to a surface and then allowing it to solidify. Thermal spray coatings are used for thermal, corrosion, and mechanical wear barriers. Thermal Spray Coating is capable of producing coatings that are much thicker than other methods.

Thermal Spray Powder: Thermal Spray Powder is powder that is used to make a thermal spray coating. The powder is introduced the plasma jet for the sprayer and is instantly melted and propelled toward the surface being coated.

Thermal Stability: Resistance of a material to drastic changes in temperature.

Thermal storage: Storage of heat or heat sinks (coldness) for later heating or cooling. Examples are the storage of solar energy for night heating; the storage of summer heat for winter use; the storage of winter ice for space cooling in the summer; and the storage of electrically-generated heat or coolness when electricity is less expensive, to be released in order to avoid using electricity when the rates are higher. There are four basic types of thermal storage systems ice storage; water storage; storage in rock, soil or other types of solid thermal mass; and storage in other materials, such as glycol (antifreeze).

Thermal storage walls (masonry or water): A thermal storage wall is a south-facing wall that is glazed on the outside. Solar heat strikes the glazing and is absorbed into the wall, which conducts the heat into the room over time. The walls are at least 8 in thick. Generally, the thicker the wall, the less the indoor temperature fluctuates.

Thermal Stresses: Stresses in metal, resulting from non uniform distribution of temperature.

Thermal-Magnetic Circuit Breaker: A circuit breaker which has the overcurrent and tripping means of the thermal type, the magnetic type or a combination of both.

thermionics : thermionics direct conversion of thermal energy into electrical energy by using the Edison effect (thermionic emission).

thermistor: An electrical resistor composed of semiconductor material, the electrical resistance of which varies rapidly with increase of temperature.

Thermistor: The resistors having resistance depending upon the temperature also used as the temperature sensor.

Thermistor Relays: A Thermistor Relay is used to protect a device, such as an electric motor, from overcurrent. An increase in current causes a PTC thermistor relay to heat up, which increases its resistivity and reduces the current to the device.

Thermistor : A resistor made of semiconductor material having resistance that varies rapidly and predictably with temperature. Used as a temperature sensor, the resistance varies inversely with temperature.

thermit welding : thermit welding a welding process that produces coalescence of metals by heating them with superheated liquid metal from a chemical reaction between a metal oxide and aluminum with or without the application of pressure.

Thermocouple: A thermoelectric device used to measure temperatures accurately, consist of two dissimilar metals joined so that a potential difference is generated that is representative of the temperature of the junction.

Thermocouple: A device consisting of two dissimilar conductors with their ends connected together. When the two junctions are at different temperatures, a small voltage is generated.

Thermocouple: the device used to measure the temperature consist of two differ materials. It works on the thermoelectric effect.

Thermocouple: A device consisting of two metals usually in wire form joined in two places. If a temperature difference exists between the junctions, a voltage is generated which can be calibrated to indicate temperature.

Thermocouple Amplifiers: A Thermocouple Amplifier is used to amplify and condition a thermocouple signal voltage so it can be processed by a microcontroller or other device.

Thermocouple Lead Wire: Similar to thermocouple wire except the degree of accuracy in temperature measurements is not as high and it is used to transmit thermocouple information to remote indicators.

Thermocouple Sensors: A Thermocouple Sensor is a device for measuring temperature. It consist of a bimetal wire pair that produces a change in voltage across its junction in response to a temperature change, known as the thermoelectric effect.

Thermocouple Wire: A thermocouple wire is made up of two separate, coated wires made of dissimilar metals. The two wires are connected at a sensing location such that a voltage is measured that reflects the temperature difference between the sensing end and the reference end of the wire. The selection of metals is dependent on the absolute temperature and temperature ranges being measured. The insulation on the conductors is typically color coded, however, the color coding scheme is different for the ASNI standard than for the IEC standard.

Thermocouple Wire: A two conductor cable, each conductor employing a dissimilar metal, made up specifically for temperature measurements.

thermocouple : A device for the measurement of temperature using a bimetallic strip.

Thermodynamics: A study of the transformation of energy from one form to another, and its practical application.

Thermography: 1) The technique of obtaining a photographic record of heat distribution in a solid or fluid.

thermomagnetic process : thermomagnetic process the process of recording and erasure in magneto-optical me-dia, involving local heating of the medium by a focused laser beam, followed by the forma-tion or annihilation of a reverse-magnetized domain. The successful completion of the process usually requires an external magnetic field to assist the reversal of the magnetiza-tion.

thermomagnetic recording : thermomagnetic recording recoding method used with magneto-optical disks. It involves first using a focused laser beam to heat the disk surface and then forming or an-nihilating magnetized domains.

thermometer coding : thermometer coding a method of coding real numbers in which the range of interest is divided into nonoverlapping intervals. To code a given real number, say x , the interval in which x lies is assigned the value $C1$, as are all intervals containing numbers less than x . All other intervals are assigned the value 0 (in the binary case) or -1 (in the bipolar case).

Thermophotovoltaic (TPV) device: A device that converts secondary thermal radiation, re-emitted by an absorber or heat source, into electricity; The device is designed for maximum efficiency at the wavelength of the secondary radiation.

Thermophotovoltaic cell: A device where sunlight concentrated onto a absorber heats it to a high temperature, and the thermal radiation emitted by the absorber is used as the energy source for a photovoltaic cell that is designed to maximize conversion efficiency at the wavelength of the thermal radiation.

Thermoplastic: A plastic compound that will soften and melt with sufficient heat. Thermoplastic insulation compounds are used to manufacture certain types of electrical cables.

thermoplastic: Substance which becomes plastic on being heated. A plastic material which can be repeatedly melted or softened by heat without change of properties.

Thermoplastic: the type of plastic which can be remelted for making the products again or which is recyclable. It can be molded in to any shape.

Thermoplastic: Insulation that will resoften and distort from its formed shape by heating above a critical temperature peculiar to the material.

Thermoplastic Elastomer: Used for insulation and jacketing compound for portable cords with the following U.L. designations. SE, SEO, SRDE, SPE, SJE, SJEO.

Thermoplastic Materials: A thermoplastic material is a polymer that changes state. When heated sufficiently, the thermoplastic turns to liquid and when cooled, the material freezes into a glass-like solid. Thermoplastics are characterized by their melt temperature and glass transition temperature, unique to each polymer. Thermoplastics can be melted, reshaped, and frozen multiple times.

Thermoplastic Pipe: Thermoplastic Pipe is polymer pipe made from Polyethylene or Polyvinyl Chloride (PVC) or similar that can be repeatedly softened with heat.

Thermoplastic Tubing: Thermoplastic Tubing is polymer tubing made from Polyethylene or Polyvinyl Chloride (PVC) or

similar that can be repeatedly softened with heat.

Thermoplastic Vessels: A Thermoplastic Vessel is a plastic storage vessel that can be used to hold fluids. Fiber reinforcement maybe incorporated for added strength, especially if the vessel is a pressure vessel.

Thermoset: A plastic compound that will not remelt. Thermoset insulation compounds are used to manufacture certain types of cables.

Thermoset: Thermosetting. The type of plastic which cannot be remolded or reheated after their initial heat-forming. it retain the high strength into any shape.

Thermosetting: Term describing insulation that will not resoften or distort from its formed shape by heating until a destructive temperature is reached.

thermosetting plastics: plastics which, having once been subjected to heat and pressure lose their plasticity.

Thermosiphon system: A solar collector system for water heating in which circulation of the collection fluid through the storage loop is provided solely by the temperature and density difference between the hot and cold fluids.

Thermostat: A device that adjusts the amount of heating and cooling produced and/or distributed by automatically responding to the temperature in the environment.

Thermostat: The electronic or thermoelectric device used to control the heat into the system. It is used as a switch into automobile to on off the cooling Fan. And into HVAC unit works as a system to control the set temperature.

Thermostat: An automatic control actuated by temperature change to maintain temperatures between predetermined limits.

Thevenin's theorem: A method of reducing a complex network of bilateral (conducts equally well in both directions) components to one voltage source and one resistor in series with the load terminals.

thevenin's Theorem: States that a linear two-terminal circuit can be replaced by an equivalent circuit consisting of an equivalent voltage source and a series equivalent impedance.

THHN: A thermoplasticinsulated, nylonjacketed conductor designed for use in dry locations and an operating temperature of up to 90 degrees Celsius

THHN: 90°C 600V nylon jacketed building wire

thick lens : thick lens lens inside of which internal ray displacements and beam profile evolution are too large to be neglected.

Thick-crystalline materials: Semiconductor material, typically measuring from 200-400 microns thick, that is cut from ingots or ribbons.

thickening : thickening image operator that symmetri-cally enlarges an image around a skeleton to eventually produce an image that had been previously reduced to the skeleton by thin-ning. Compare with thinning.

Thickness Gauges: A thickness gauge is a device that determines the thickness of thin wall or coating. This is often done with a the use of a ultrasonic transducer. Ultrasonic waves propagated in the layer being measured at a known wavespeed and reflect back to the transducer when they encounter an interface. The transit time of the wave in the material can be correlated to the thickness of the layer.

Thin ethernet. : (in lan technology) an ethernet lan or an ieee 802.3 lan that uses smaller-than-normal diameter coax; often used to link ibm personal computers together. Operates at same frequency as ethernet but smaller distances; also known informally as "cheapernet".

Thin Film: A layer of semiconductor material, such as copper indium diselenide, cadmium telluride, gallium arsenide, or amorphous silicon, a few microns or less in thickness, used to make photovoltaic cells.

Thin film: A layer of semiconductor material, such as copper indium diselenide, cadmium telluride, gallium arsenide, or amorphous silicon, a few microns or less in thickness, used to make photovoltaic cells.

Thin Film: The layer of materials having thickness ranging from nanometer to micrometers.in electronics semiconductor devices and optical coatings have thin film parameters.

Thin Film (Photovoltaic): See "Amorphous Semiconductor"

Thin Gauge Diaphragms: A Thin Gauge Diaphragm is a flexible mechanical barrier that is anchored on its perimeter.

thin lens : thin lens lens inside of which internal ray displacements and beam profile evolution are so small that they may be neglected.

thinning : thinning image operator that clears, somehow symmetrically, all the interior bor-der pixels of a region without disconnecting the region. Successively applying a thinning operator results in a set of arcs forming a skeleton. Compare with thickening.

third rail : third rail a method of transmitting power to an electric locomotive. An insulated steel rail is laid along the railbed just outside the traction rails. This third rail is maintained at (typically) 600 volts DC by the railroad power supply, and contact is made to the lo-comotive by a shoe which slides atop the rail. Ground return is through the traction rails.

third-harmonic generation : third-harmonic generation the process in which a laser beam of frequency ! in-teracts with a nonlinear optical system to produce a beam at frequency 3!. See also harmonic generation.

third-order intercept (TOI) point : third-order intercept (TOI) point this gives a measure of the power level where significant undesired nonlinear distortion of a communication signal will occur. It is re-lated to the maximum signal that can be pro-cessed without causing significant problems to the accurate reproduction of the desired information (e.g., TV signal). Technically, the TOI is the hypothetical power in decibel-meter at which the power of the "third-order intermodulation" nonlinear distortion prod-uct between two signals input to a component would be equal to the linear extrapolation of the fundamental power.

third-order susceptibility : third-order susceptibility a quantity, often designated χ^3 , describing the third-order nonlinear optical response of a material system. It is defined through the relation $P_3 = \chi^3 E^3$ where P_3 is the 3rd order contribution to the material polarization. The coefficient χ^3 is of order unity and differs depending on the conventions used in defining the electric field strength. The third-order susceptibility is a tensor of rank 4 and describes nonlinear optical processes including third harmonic generation, four-wave mixing, and the intensity dependent refractive index. See also nonlinear susceptibility.

Third-party DSM program sponsor: An energy service company (ESCO) which promotes a program sponsored by a manufacturer or distributor of energy products such as lighting or refrigeration whose goal is to encourage consumers to improve energy efficiency, reduce energy costs, change the time of usage, or promote the use of a different energy source.

Third-party transactions: Third-party transactions are arms-length transactions between non-affiliated firms. Producing country-to-company transactions are not considered to be third-party transactions.

Thomas Process: The continental name for the basic Bessemer steel making process, now superseded by modern day BOS plants

thoriated : thoriated pertains to a metal to which the element thorium has been added.

Thorium: An element that is a byproduct of the decay of uranium.

thrashing : thrashing in a paging system, the effect of excessive and continual page transfers that can occur because the memory is overcommitted and programs cannot obtain sufficient main memory.

thread : thread in software processes, a thread of control is a section of code executed independently of other threads of control within a certain program.

Thread Sealant: Thread Sealant is used to seal threaded joints in pressurized systems. There are several types including paste and Teflon tape.

Threaded Valves: A Threaded Valve can be any type of valve with threaded connections so it can be easily integrated into a pipe system.

Threader Coil: A narrow width coil of TU plate with a base weight between 75# to 100#. This coil is used anytime the line is to be shut down or on a line start up. 2) The last coil threaded through the line. The threader coil remains in the line until start up. 3) A coil fed into the line only to make a connection between sizes.

Threading Table: Extension plate to assist in threading the coil end into the McKay leveler.

Threat : Any potential event or act that could cause one or more of the following to occur: unauthorized disclosure, destruction, removal, modification or interruption of sensitive information, assets or services, or injury to people. A threat may be deliberate or accidental (ca).

Three Phase: Three phase refers to one circuit consisting of three conductors where the current and voltage in each conductor (phase) is 120° out of phase with each other phase.

Three Phase AC Motors: Three Phase AC Motors have three poles spaced at 120 degrees. This arrangement produces a rotating magnetic field in response to input Three Phase AC power which generates torque on the rotor shaft. Three Phase motors are reliable and easy to maintain and do not require a starting torque, unlike single phase AC motors.

three phase circuit: A combination of circuits energized by three alternating sources which differ in phase usually by one third of a cycle (120°). A three phase circuit may be three wire or four wire with the fourth wire being the neutral wire.

three phase fault: three phase fault a fault on a three phase power line in which all three conductors have become connected to each other and possibly the ground as well.

Three Phase Transformer: A Three Phase Transformer is used to step-up or step-down voltages from a three phase power source. Essentially a three phase transformer is nothing more than three single phase transformers integrated into a single package.

Three Piece Can: Three piece cans consist of a body and two ends. The body side seam can be accomplished by soldering, cementing or welding. The two ends are attached using a double rolled seam. The curl on the end, containing the seal compound and its flange on the can body are indexed and rolled flat. The sealing compound between fold gives an hermetic seal.

Three Position Center "OFF": A two circuit, three position switch either the maintained or momentary type, in which the OFF position is indicated by the centered position of the actuator.

Three Quarter Hard Temper: (A) In stainless steel strip tempers are based on a minimum tensile or yield strength. For Chromium Nickel grades three quarter hard temper is 175,000 T.S., 135,000 Y.S. min. (B) In Brass mill terminology, this temper is three B&S numbers hard or 29.4% thickness reduction.

Three Way: A term used to describe a valve that has three ports, normally a pressure (inlet) port, a normally closed (n.c.) port and a normally open (n.o.) port. Used to block or open a common flow passage.

Three Way Ball Valves: A Three Way Ball Valve is used to control flow through from one input into two outputs, or two inputs into one output. Both T- or L- shaped channels can be incorporated in the ball.

Three Wire: See Delta.

three-antenna gain measurement method : three-antenna gain measurement method technique based on Friis transmission formula in which the gain of each of three different antennas is calculated from a measurement of three insertion loss values (corresponding to all three combinations of antenna pairs) and the calculated propagation loss between the antenna pairs.

three-gun color display : three-gun color display a color-TV picture tube having a separate gun for each primary color (red, green, and blue).

three-lamp synchronizing : three-lamp synchronizing a method used to connect a three-phase power system in parallel to another one. In order to connect two systems, they must have the same voltage magnitude, frequency, and phase-shift. To determine that is the case, an open switch is connected between the phases of the two systems and a lamp is connected across the open switch pole in each phase. If the criteria previously listed are met, the lamps will all be dark. If there is a difference in voltage, the lamps will glow. If there is a difference in frequency, the lamps will alternately glow and go dark in unison. Finally, if the two sides have different phase rotations, the lamps will blink sequentially as only one phase can be aligned at a time. In order to synchronize the two systems, it is necessary to close the contactor when the phase-shift is minimum, which means that the three lights are dark.

three-level laser : three-level laser in which the most important transitions involve only three energy states; usually refers to a laser in which the lower level of the laser transition is separated from the ground state by much less than the thermal energy kT . Contrast with four-level laser.

Three-Mile Island : Three-Mile Island typically refers to a cooling failure at a nuclear power plant on the Susquehanna River in central Pennsylvania, USA in 1979.

Three-Phase: Multiple phase power supply or load that uses at least three wires where a different voltage phase from a common generator is carried between each pair of wires. The voltage level may be identical but the voltages will vary in phase relationship to each other.

Three-phase circuit: A combination of circuits energized by AC that differ in phase by one-third of a cycle, that is, 120 degrees.

three-phase inverter : three-phase inverter an inverter with a three-phase AC voltage output.

Three-phase power: Power generated and transmitted from generator to load on three conductors.

Three-phase transformer: A combination in one unit of three single-phase transformers with separate electric circuits, but having certain magnetic circuits in common. There are three magnetic circuits through the core, and the fluxes in the various circuits are displaced in phase.

three-point tracking : three-point tracking a tracking error reduction technique in which the preselector and local oscillator have trimmed capacitors added in parallel to the primary tuning capacitor and the local oscillator has an additional padding capacitor in series with the tuning coil.

three-terminal device : three-terminal device an electronic device that has three contacts, such as a transistor.

Three-Way Switch: (single pole double throw) A switch which is used in pairs to control one load from two or more locations.

three-winding transformer : three-winding transformer a transformer with three windings, typically primary, secondary, and tertiary. Common three phase, three winding transformers employ wye connected primary and secondary windings and a delta connected tertiary winding. In some cases, an autotransformer is used to form the primary-secondary combination.

three-wire method : three-wire method in the three-wire method, the remote resistor (which plays the role of active gauge) is connected to the bridge circuit by three wires. One end of this resistor is connected by one wire to the bridge power supply node; at another end of the resistor there are two wires, the first of which is connected to the detector and the second is to the adjacent resistor of the bridge. Other arrangements are possible as well. The goal is to reduce the errors introduced by the long wires while measuring the remote resistor value.

threshold : threshold (1) the limiting value of some variable of interest.(2) the condition under which the unsaturated round-trip gain in a laser is equal to the loss. (3) that point at which the indication exceeds the background or ambient.

threshold coding : threshold coding a coding scheme in transform coding in which transform coefficients are coded only if they are larger than a selected threshold.

Threshold Current: The symmetrical RMS available current at the threshold of the current-limiting range when tested to the industry standard. This value can be read off of a peak let-through chart where the fuse curve intersects the A-B line. A threshold ratio is the relationship of the threshold current to the fuse's continuous current rating.

threshold current : threshold current the current in an electrically pumped laser that is necessary for the unsaturated round-trip gain to be equal to the loss.

threshold decoding : threshold decoding a special form of majority-logic decoding of block or convolutional codes.

threshold inversion : threshold inversion population inversion that provides an unsaturated round-trip gain in a laser equal to the loss.

threshold sample selection : threshold sample selection in transform coders, quantization could be nonadaptive from block to block, where a percentage p of coefficients transmitted could vary according to spatial activity. To avoid large reconstruction errors as in coefficient reduction used by zonal selection, a threshold is chosen. Only the coefficients whose values are above the threshold are quantified and encoded.

threshold voltage : threshold voltage when applied between the gate and source of a MOSFET, the voltage, V_T , that results in an inversion of the charge carrier concentration at the silicon surface.

thresholding : thresholding any technique involving decision making based on certain deliberately selected value(s) known as threshold(s). For an example, refer to threshold coding. These techniques are also often utilized in image segmentation: specifically, thresholding groups of pixels into black and white based on a numerical value; pixel levels below the value (threshold) become black, those above become white.

Throttle Valve: A manual valve used to regulate the amount of steam entering the turbine.

Through Fault Current: The current flowing through a protected zone to a fault beyond that zone.

Through Fault Current: The current flowing through a protected zone to a fault beyond that zone.

through via : through via a via that connects the primary side and secondary side of a packaging and interconnecting structure.

Through-Hole: The hole throughout to any material or any devices may be generated by reaming or any drilling operation.

Throughput: A general term used when defining the rate of data transfer over a particular medium, such as a wireless network or a phone line.

Throughput: The amount of data transferred from one place to another or processed in a specified amount of time. Data transfer rates for disk drives and networks are measured in terms of throughput. Typically, throughputs are measured in kbps, Mbps and Gbps.

throughput : throughput the amount of flow per unit time. Generally refers to information flow.

Throughput delay. : The length of time required to accept input and transmit it as output.

Throughput Rate: Speed of execution, in samples or bits per second, for a given continuous operation, calculated to include software overhead.

Throughput. : A measurement of processing or handling ability which measures the amount of data accepted as input and processed as output by a device, link, network or a system.

through-reflect-line calibration : through-reflect-line calibration a network analyzer two-port probe calibration technique. A TRL two-port calibration requires a thru standard, reflect (open circuit is preferred, short is optional), and one or more lines (transmission lines). It has the advantages of self-consistency and it requires electrically simple standards.

Thrust Ball Bearings: A Thrust Ball Bearing consists of a ring of ball bearings sandwiched axially between two bearing races. They are suitable for axial loading only.

Thumper: A high voltage device used to locate an underground cable fault. The device applies a high voltage to the faulted cable with a resulting discharge to ground at the location of the fault.

thumper : thumper slang for a time-domain reflectometer used to detect and locate defects in buried electric power cables.

thunder: The sound that follows a flash of lightning and is caused by the sudden expansion of the air in the path of the electrical discharge. This explosive heat produces a massive, deafening shock wave - thunder.

THW: A thermoplastic insulated, moisture resistant conductor designed for use in wet or dry locations and an operating temperature of up to 75 degrees Celsius.

THW: Thermoplastic vinyl insulated building wire. Flame-retardant, moisture and heat-resistant. 75°C. Dry and wet locations.

THWN: Same as THW but with nylon jacket overall. 75°C

THWN-2: A thermoplastic insulated, nylonjacketed, moisture resistant conductor designed for use in wet or dry locations and an operating temperature of up to 75 degrees Celsius.

thyatron : thyatron (1) gas-filled triode in which the voltage on the grid can trigger ionization of the gas in the tube. Once the gas is ionized, current flows from cathode to anode until the potential across the two falls below a certain level. In Linac (a linear accelerator), the thyatrons are used as high-voltage relays in the chopper power supplies and in the RF modulators to trigger the ignitrons.(2) an electronic tube containing low pressure gas or metal vapor in which one or more electrodes start current flow to the anode but exercise no further control over its flow.

thyristor : thyristor a controllable four-layer (pn-pn) power semiconductor switching device that can only be on or off, with no intermediate operating states like transistors. See also silicon controlled rectifier .

thyristor rectifier : thyristor rectifier a rectifier where the switches are thyristors. Thyristors are turned on by a gate trigger signal, and turned off by natural commutation. The output voltage is controllable by adjusting the firing angle of the trigger signal. The direction of the power flow is reversible when an inductive load is used. When the average power flow is from DC to AC ($>=2$), the rectifier is said to be operating in the line-commutated inverter mode.

Thyristor : A broad classification of semiconductor devices used as electronic switches.Examples include diacs, SCRs, and triacs.

thyristor : A solid-state switching device for semiconductors to convert AC current in one of two directions controlled by an electrode.

thyristor-controlled series compensator: thyristor-controlled series compensator a capacitor bank installed in series with an electric power transmission line in which each capacitor is placed in parallel with a thyristor device. Each capacitor may thus be switched in or out of the line for some variable portion of the AC cycle so as to maintain the line's maximum power-carrying ability under varying load conditions.

thyristor-controlled phase angle regulator : thyristor-controlled phase angle regulator a phase shifting device used in transmission systems. The phase angle change is brought about by thyristor-based control.

Thz. Terahertz (1012hz). : Used as an indicator of the frequency of infrared, visible and ultraviolet radiation.

Ti: Chemical symbol for Titanium

Ti sapphire laser : Ti sapphire laser laser in which the active medium is sapphire with titanium substituted for some of the aluminum atoms, important for its large bandwidth in the visible spectrum.

TIA: (Telecommunications Industry Association) Industry trade association which works with the Electronics Industry Association (EIA) in developing standards.

Tidewater piers and coastal ports (method of transportation to consumers): Shipments of coal moved to tidewater piers

and coastal ports for further shipments to consumers via coastal water or ocean.

Tie: A wire device that connects a conductor to an insulator. Factory formed ties are manufactured by Preformed Line Products Company.

Tie Bar: Bar or rod shaped part of the casting added to prevent distortion caused by uneven contraction between separated members.

Tie line: A transmission line connecting two or more power systems.

Tie line (electric): A circuit connecting two Balancing Authority Areas. Also, describes circuits within an individual electrical system. NERC definition

Tie line. : See circuit, trunk.

tie switch : tie switch a disconnect switch used on feeders and laterals to reconfigure distribution circuits to allow for line maintenance.

tiepoint : tiepoint a point in an input image whose corresponding point in a transformed image is known. Tiepoints are often used to specify transformations in which the locations of transformed pixels change, as in geometric transformations and morphing. See also geometric transformation.

tier : tier a group of cellular network cells of similar distance from some specific central cell. The tier number is the number of cell radii distant that the tier is from the central cell.

Tight Flask: A type of flask which remains on mold during pouring. Lugs are normally provided for clamping cope and drag together for pouring.

Tight oil: Oil produced from petroleum-bearing formations with low permeability such as the Eagle Ford, the Bakken, and other formations that must be hydraulically fractured to produce oil at commercial rates. Shale oil is a subset of tight oil.

tightly coupled multiprocessors : tightly coupled multiprocessors a system with multiple processors in which communication between the processors takes place by sharing data in memory that is accessible to all processors in the system.

tilt angle : tilt angle the angle by which a surface slants away from the viewer's frontal plane.

TIM: traffic indication map

time base: Circuitry that controls the time dependence for the sweep. The saw tooth waveform is commonly used to give a repetitive linear time base.

Time Belt Pulleys: A Time Belt Pulley is a notched pulley that is used with a timing belt to synchronize motion of mechanical valves or other similar applications.

Time clocks or timed switches: Time clocks are automatic controls, which turn lights off and on at pre determined times.

time constant: The time constant of a circuit is the time required for the state of the circuit to change from the initial state to the final state at the initial rate of change.

time constant : time constant mathematically, the time required for the exponential component of a transient response (input as the step function) to decay to 37% ($1=e$) of its initial value, or rise to 63% ($1 - 1=e$) of its final value, where e is the mathematical constant 2.718281828 : : . In electronic circuits, the time constant is often related directly to the circuit RC value (i.e., the product of the resistance in ohms and the capacitance in farads) or to its L/R value (i.e., the ratio of the inductance in henrys to its resistance in ohms). See also settling time. In a control system transfer function factor, T is the time constant and is equal to $1/f$ where f is the corner frequency in the bode plot. A closed-loop control system commonly has more than one time constant.

time correlation function : time correlation function a function characterizing the similarity of a received signal with respect to a shift in time. See also correlation.

Time Delay: A relay having an intentional delaying device.

Time Delay: the controlled period between the functioning of two events

Time Delay: A period of time when a load is energized or de-energized. At the end of the desired time period the load changes state (i.e. on or off).

time delay : time delay a time-current response characteristic, established by national standards, which means that a time-delay fuse is designed to carry five times rated current for 10 seconds before opening. See also envelope delay.

Time Delay Fuse: A fuse which will carry an overcurrent of a specified magnitude for a minimum specified time without opening, as defined in the tri-national Fuse Standard 248.

Time Delay Relay: A delay intentionally introduced into the operation of a relay system.

Time Delay Relay: A Time delay relay is a combination of an electromechanical output relay and a control circuit.

time diversity : time diversity a way to try to obtain un-correlated received signals to improve the performance of the system by transmitting the signals in different time instants. Inter-leaving is one way to implement time diversity.

time division duplexing (TDD) : time division duplexing (TDD) a technique for achieving duplex (i.e., two-way) communication. One direction of transmission is conducted within specific segments of time, and the reverse direction of transmission is conducted within different segments of time.

time division multiple access (TDMA) : time division multiple access (TDMA) a technique for sharing a given communication resource amongst a number of users. The available communication resource is divided into a number of distinct time segments, each of which can then be used for transmission by individual users. Sometimes used in cellular and personal communications applications.

Time division multiple access (tdma) . : See tdma.

Time division multiplex. : Multiplexing in which a separate periodic time interval is allocated to each tributary channel in the common channel. See tdm.

time division multiplexing (TDM) : time division multiplexing (TDM) refers to the multiplexing of signals by taking rounds of samples from the signals. Each round consists of one sample from each signal, taken as a snapshot in time. See also time division multiple access.

time domain : time domain storage an optical data storage technique in which time-dependent information is stored as a Fourier transform in an inhomogeneously broadened spectral hole burning material. This is usually accomplished with photon echoes or spin echoes. The maximum storage density is given by the ratio of inhomogeneous to homogeneous widths of the absorption spectrum.

time domain analysis : time domain the specification of a signal as a function of time; time as the independent variable.

time domain storage : time domain analysis a type of simulation that allows the user to predict the circuit response over a specified time range. The result of the simulation is a graph of amplitude against time.

time frequency analysis : time frequency analysis any signal analysis method that examines the frequency properties of a signal as they vary over time.

Time handed in. : See filing time/time handed in.

time hopping : time hopping a type of spread spectrum wherein the transmission of the signal occurs as bursts of pulses in time. Each burst has a random starting time and may have a fixed or random duration.

time invariance : time invariance a special case of shift invariance, applying in the time domain. In particular, the impulse response of a system is independent of the time at which the impulse occurs. See also space invariance.

time invariant channel : time invariant channel a communication channel for which the impulse response and transfer function are independent of time. Strictly time-invariant channels do not exist in practice, but many communication channels can be regarded as time invariant for observation intervals of practical interest.

Time of delivery. : The date and time at which a message is delivered to an addressee.

Time of dispatch. : The date and time at which a communication is dispatched to an addressee or communication agency. Not to be used in connection with messages transmitted by telecommunications.

Time of origin. : See date-time group (dtg).

Time of receipt. : The date and time at which a communication agency completes reception of a message transmitted to it by another communication agency.

time overcurrent (TOC) relay : time overcurrent (TOC) relay an over-current relay that has intentional, selectable, time delay. The time delay is chosen so that the relay will operate more slowly than downstream relays or fuses, and more quickly than upstream relays or transformer fuses. Relay and fuse curves are generally displayed on time-current curves.

Time Rating : Most motors are rated for continuous duty which means that they can operate at full load torque continuously without overheating. Motors used on certain types of applications such as waste disposal, valve actuators, hoists, and other types of intermittent loads, will frequently be rated for short term duty such as 5 minutes, 15 minutes, 30 minutes, or 1 hour. Just like a human being, a motor can be asked to handle very strenuous work as long as it is not required on a continuous basis.

time response : time response the system response in the time domain when a reference input signal is applied to a system. The time response of a control system is usually divided into two parts: the transient response and the steady-state response.

time shift : time shift for a signal $x.t/$ a displacement in time t_0 . The time shift is given by $x.t - t_0/$.

time slot : time slot in time-division multiple access (TDMA), a time segment during which a designated user transmits, or control information is transmitted. In time-division multiplexing (TDM), each time slot carries bits associated with a particular call, or control information.

Time slot. : (in lan technology) an assigned period of time or an assigned position in a sequence.

time stability : time stability the degree to which the initial value of resistance is maintained to a stated degree of certainty under stated conditions of use over a stated period of time. Time stability is usually expressed as a per-cent or parts per million change in resistance per 1000 hours of continuous use.

Time Switch : An electronic or electro-mechanical control, used to schedule "turn on" and "turn off" time based on the time of day.

Time Temperature : An isothermal transformation diagram showing the relationship between temperature and the time taken.

time variant channel : time variant channel a communication channel for which the impulse response and transfer function are functions of time. All practical channels are time-variant, providing the observation interval can be arbitrarily long. See also fading channel.

time variant system : time variant system system in which the parameters vary with time. In practice, most physical systems contain time varying elements.

time varying system : time varying system a system not exhibiting time invariance. In particular, one in which the impulse response varies as a function of the time at which the impulse occurs.

Time zones. : The description and designation of letters assigned to time zones are given in acp 127 series.

Time, greenwich mean (gmt). : Mean solar time at the meridian of greenwich.(allocated time zone suffix zulu).

time-bandwidth product : time-bandwidth product (1) in an acousto-optic deflector, the product of the acoustic-wave propagation time across the optical beam and the electrical bandwidth for optical diffraction; equivalent to the number of independent resolvable spots for the acousto-optic deflector. For coded signals such as chirp signals, the signal duration times

the bandwidth of the signal; equivalent to the pulse compression ratio obtained in autocorrelation. See also pulse compression.
(2) the product of a signal's duration and bandwidth approximates the number of samples required to characterize the signal.

time-delay neural network : time-delay neural network a multilayer feed-forward network in which the output is trained on a sequence of inputs of the form $x.t$; $x.t - D$; $x.t - 2D$; $x.t - mD$, where x is, in general, a vector. By specifying the required output at sufficient times t , the network can be trained (using backpropagation) to recognize sequences and predict time series.

time-delay relay : time-delay relay relay that responds with an intentional time delay.1. in control circuits, time-delay relays are used to cause a time delay in the state of the relay when power is applied or removed to the relay actuator;2. in power system protective relays, the response time usually depends on the magnitude of the measured value. If the measured value is a large multiple of the pickup value, then the relay operates or trips after a short time delay. For smaller multiples of pickup, the relay trips after a longer time delay.

time-dependent dielectric breakdown : time-dependent dielectric breakdown breakdown of a dielectric is marked by a sudden increase in current when an electric field is applied. The breakdown does not occur immediately upon application of the electric field, but at a period of time later that depends exponentially upon the magnitude of the field.

time-invariant system : time-invariant system the system in which the parameters are stationary with respect to time during the operation of the system.

time-of-arrival : time-of-arrival the time instant of the arrival of the first signal component to the radio receiver. See also propagation delay.

Time-of-day lock-out or limit: A special electric rate feature under which electricity usage is prohibited or restricted to a reduced level at fixed times of the day in return for a reduction in the price per kilowatt hour.

Time-of-day pricing: A special electric rate feature under which the price per kilowatt hour depends on the time of day.

Time-of-day rate: The rate charged by an electric utility for service to various classes of customers. The rate reflects the different costs of providing the service at different times of the day.

time-of-day rate : Electricity prices that vary depending on the time periods in which the energy is consumed. In a time-of-day rate structure, higher prices are charged during utility peak-load times. Such rates can provide an incentive for consumers to curb power use during peak times.

timeout : time-to-close contact a contact in which the desired time to close the contactor could be set by the user.

Timeout (1) : The expiration of a predefined interval which then triggers some action - such as a disconnection that occurs following 30 seconds without any data activity (in a 30-second, no-activity timeout).

Timeout (2) : The length or existence of such an interval.

Timer: An electronic or electro-mechanical control used to produce a time delay to control a load.

Timer Control Modules: A Timer Control Module is used to turn devices on or off in response to a timer. Many modules can interface multiple devices.

Timesharing : A method of computer operation that allows several interactive users to use a computer and its facilities; although the terminals are actually served in sequence, the high speed of the computer makes it appear as if all terminals were being served simultaneously.

time-to-close contact : time-to-open contact a contact in which the desired time to open the contactor could be set by the user.

time-to-open contact : timeout the concept of allowing only a certain specified time interval for a certain event. If the event has not occurred during the interval, a timeout has said to have occurred.

timing : timing error an error in a system due to faulty time relationships between its constituents.

timing diagram : timing the temporal relationship between signals.

Timing differences: Differences between the periods in which transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income. Timing differences originate in one period and reverse or "turn around" in one or more subsequent periods. Some timing differences reduce income taxes that would otherwise be payable currently; others increase income taxes that would otherwise be payable currently.

timing error : timing diagram a diagram showing a group of signal values as a function of time. Used to express temporal relationships among a series of related signals.

Timing Pulleys: A Timing Pulley is a notched pulley that is used with a timing belt to synchronize motion of mechanical valves or other similar applications.

Timing Relays: A Timing Relay is a relay that, once activated, will stay on (or off) for a prescribed amount of time before breaking (or engaging) contact.

Tin Free Steel: Chromium coated steel. Because it is used in food cans just like tin plate, it ironically is classified as a tin mill product. Tin free steel is easier to recycle because tin will contaminate scrap steel in even small concentrations.

Tin Mill: Continuous tin plating facility to produce tin mill steel sheet to be used in food and beverage cans and other containers.

Tin Mill Product: Tin Plate, Tin Free Steel, or Black Plate.

Tin oxide: A wide band-gap semiconductor similar to indium oxide; used in heterojunction solar cells or to make a transparent conductive film, called NESA glass when deposited on glass.

Tin Plate: Tinplate is low carbon mild steel coated on both top and bottom surfaces with an electrolytic deposition of tin. The deposited tin exists as alloyed and free tin and has a passivated surface as well as a coating of oil.

Tin Plate Base Box: A Tin Plate Base Box is measured in terms of pounds per Base Box (112 sheets 14 x 20) a unit peculiar

to the tin industry. This corresponds to its area of sheet totaling to 31.360 square inches of any gage and is applied to tin plate weighing from 55 to 275 pounds per base box. To convert to decimal thickness multiply weight per base box by .00011.

Tin Plating: Electroplating metal objects with tin; the object to be coated is made cathode (negative electrode) in an electrolytic bath containing a decomposable tin salt.

tin whisker : tin whisker a hairlike single crystal growth formed on the metallization surface.

Tin Whiskers: The individual crystals of tin that grows from a tinned surface due to some type of stress. Tin is more prone to creating whiskers than alloys.

Tin/Chrome Plating: A plating process whereby the molecules from the positively charged tin or chromium anode attach to the negatively charged sheet steel. The thickness of the coating is readily controlled through regulation of the voltage and speed of the sheet through the plating area.

Tin角度: Coating with tin, commonly either by immersion into molten tin or by electro deposition; also by spraying.

Tinning: Tinning is divided into two types Electrotinned and Hot Dipped. Electrotinned is the process of electroplating the surface of a conductor material with a tin or tin-lead alloy.

Tinplate: Thin steel sheet with a very thin coating of metallic tin. Used primarily in can making.

Tinsel Wire: A very flexible conductor made by serving one or more very small flat conductors over a fibrous core such as a high tenacity rayon, nylon, fortisan or cotton fibers.

tint : tint the intensity of color. The name for a non-dominant color.

Tinted or reflective glass or shading films: Types of glass or a shading film applied to glass that, when installed on the exterior of a building, reduces the rates of solar penetration into the building. Includes Low E Glass.

Tip: The positive conductor of a pair in a basic telephone circuit. The tip is grounded.

Tippling fee: Price charged to deliver municipal solid waste to a landfill, waste-to-energy facility, or recycling facility.

Tipple: A central facility used in loading coal for transportation by rail or truck.

Titanium: Chemical symbol Ti. Element No. 22 of the periodic system; atomic weight 47.90; melting point about 3270 (degrees) F.; boiling point over 5430 (degrees) F.; specific gravity 4.5. Bright white metal, very malleable and ductile when exceedingly pure. Its principal functions as an alloy in the making of steel. (1) Fixes carbon in inert particles (a) reduces martensitic hardness and hardnability in medium chromium steels. (b) prevents formation of austenite in high chromium steels. (c) prevents localized depletion of chromium in stainless steel during long heating. Now finding application in its own right because of its high strength and good corrosion resistance.

Titanium Heat Exchangers: Titanium Heat Exchangers are used in to transfer heat between fluids in moderately corrosive environments that can attack copper heat exchangers. Titanium heat exchangers are often used with treated pool water, for example.

Titanium Machining: Titanium Machining refers to shaping titanium alloy with a rotating cutter on a milling machine. Titanium alloy is a difficult material to machine because of its high strength and relatively low heat transfer coefficient. Machined titanium components are used in aerospace and biomedical applications.

Titanium Vessels: Titanium Vessels are used in certain applications because of their high strength to weight ratio and in corrosive environments because of titanium's resistance to many common corrosives.

TMI : TMI refers to an accident at the Three Mile Island nuclear plant in 1979.

TN C S system : , a system in which neutral and protective functions are combined in a single conductor in part of the system,

TN C system : , a system in which neutral and protective functions are combined in a single conductor throughout the system,

TN S system : , a system having separate neutral and protective conductors throughout the system,

TN system: A system having one or more points of the source of energy directly earthed, the exposed conductive parts of the installation being connected to that point by protective conductors.

TN system : , a system having one or more points of the source of energy directly earthed, the exposed conductive parts of the installation being connected to that point by protective conductors,

Tnc. : A threaded connector for miniature coax; tnc is said to be short for threaded-neillconcelman (see n connector and c connector). Contrast with bnc.

TNS system of earthing : In this earthing system, the supplier provides separate Neutral and Protective conductors throughout the system. The Protective Conductor is connected to the neutral of the source. All exposed conductive parts of a consumer's installation are connected to the Protective Conductor provided by the supplier via the main earthing terminal of the consumer's installation.

Toeplitz matrix : Toeplitz matrix a matrix with the property that it is symmetric and the $i; j$ th element is a function of $i - j$. The Toeplitz nature of autocorrelation matrices of wide-sense stationary discrete time random processes is exploited extensively in minimum mean square error prediction/estimation algorithms.

toggle : toggle change of state from logic 0 to logic 1, or from logic 1 to logic 0, in a bistable device.

Toggle Bolt: A Toggle Bolt is a fastener that is used when attaching something to drywall, or other structure that offers limited resistance to thread pull-out. The toggle is a spring loaded clip that can be pushed through the hole and provides an anchor to the opposite side of the wall once it expands.

Toggle Dimming: Is achieved through up or down toggling of traditional switch style toggle used to control the dimming components.

Toggle Switch: A switch having a lever type actuating member which makes or breaks the switch contacts when its position is

changed.

Toggle Switches: Toggle Switches are mechanically actuated switches. A light switch is an example of a toggle switch.

TOI point : TOI point See third-order intercept point.

token: token device that generates or assists in generation of one-time security code/pass-words.

token bus : token bus a method of sharing a bus-type communications medium that uses a token to schedule access to the medium. When a particular station has completed its use of the token, it broadcasts the token on the bus, and the station to which it is addressed takes control of the medium. Also called token ring.

Token bus, token-passing bus. : (in lan technology) a bus topology lan that uses a token for explicit access. Specified in iso 8802/4 and ieee 802.4.

Token ring, token-passing ring. : (in lan technology) a ring topology lan that uses a token for explicit access. Specified in iso 8802/5 and ieee 802.5.

Token. : (in lan technology) a packet (or part of a packet) used in explicit access lans; the station that “owns” the token is the station that controls the transmission medium.

Tokomak : Tokomak an experimental power reactor that uses fusion, in which the hot plasma is contained and compressed with a magnetic field.

tolerance : tolerance (1) the total amount by which a quantity is allowed to vary; thus the tolerance is the algebraic difference between the maximum and minimum limits. In the design of microwave component, it is important to perform a tolerance analysis in order to ascertain if a given component will also satisfy specifications when taking manufacturing tolerances into account. (2) the amount of error allowable in an approximation.

Tolerance Limit: The permissible deviation from the desired value.

Tolerance : Used to describe the allowable variance in a measurement or a component's value.

Toll Processing: The act of processing steel for a fee (toll). Owners of the steel sheet may not possess the facilities to perform needed operations on the material (or may not have the open capacity). Therefore, another steel mill or service center will slit, roll, coat, anneal, or plate the metal for a fee.

Tolling arrangement: Contract arrangement under which a raw material or intermediate product stream from one company is delivered to the production facility of another company in exchange for the equivalent volume of finished products and payment of a processing fee.

Toluene: 653 Colorless liquid of the aromatic group of petroleum hydrocarbons, made by the catalytic reforming of petroleum naphthas containing methyl cyclohexane. A high-octane gasoline-blending agent, solvent, and chemical intermediate, and a base for TNT (explosive).

Tomlinson precoding : Tomlinson precoding a transmitter pre-coding method that compensates for inter-symbol interference introduced by a dispersive channel. The purpose is to move the feedback filter $F_{z/}$ of a decision-feedback equalizer to the transmitter. The purpose of the mod2M operation is to satisfy the transmitted power constraint.

tomography : tomography the process of forming a cross-sectional view of an object by irradiating it from many directions and deducing from the transmitted energies the interior structure of the object. This latter process is known as reconstructing an image from its projections. Tomography can provide a very detailed map of the inside of an object and has revolutionized medical diagnostics. Also known as computed tomography (CT). See also projection, fan beam reconstruction, Radon transform.

ton: An imperial unit of weight. 1 ton = 1.016 tonnes = 1016 kg

Ton mile: The product of the distance that freight is hauled, measured in miles, and the weight of the cargo being hauled, measured in tons. Thus, moving one ton for one mile generates one ton mile.

tone control : tone control a resistance-capacitance network used to alter the frequency response of an amplifier by accentuating or attenuating the bass or treble portion of the audio-frequency spectrum. See figure .

Tong Hold: The portion of a forging billet, usually on one end, that is gripped by the operator's tongs. It is removed from the part at the end of the forging operation. Common to drop hammer and press type forging.

Tonghold: The portion of the stock by which the operator grips the stock with tongs. A small portion of metal projecting from the forging used to manipulate the piece during the forging operation, usually trimmed off.

tonne : Metric tonne. An unit of weight. 1 tonne = 1000 kg

Tool: A term usually referring to the dies, mandrels, etc., used in the production of extruded or drawn shapes or tube

tool: Object (e.g. screwdriver) which may be used to secure or release fasteners or to make adjustments.

Tool Sharpening Equipment: Tool Sharpening Equipment refers to any tools that are used to repair or regrind cutting tools. The can be as simple as a sharpening stone or as complex as a 5 axis CNC tool grinder.

tool space : tool space space of a 6 1 vector representing the positions and orientations of the tool or end effector of the robot.

Tool Wear: A gradual deterioration of tools and dies. In the case of fabrication of stainless steels, the surface oxides of the stainless gradually either abrade or build up on the tooling. Other factors (high hardness, non metallic inclusions) can also accelerate tool wear.

Tooling Plate: A cast or rolled product of rectangular cross section of thickness 0.250 inch or greater and with edges either as cast, sheared or sawed with internal stress levels controlled to achieve maximum stability for machining purposes to tool and jig applications.

Tooling Points: The fixed positions on the casting surfaces used for references during layout and machining.

top antireflective coating (TAR) : top antireflective coating (TAR) a thin film coated on top of the photoresist used to reduce reflections from the air-resist inter-face and thus reduce swing curves.

Top Dross: Skimmings for the continuous galvanize pot. Composition consists of approximately 87% zinc, 5% aluminum, and 6% to 8% iron.

top hat transform : top hat transform a transform used in mathematical morphology. Let A be a structuring element centered about the origin, and for every pixel p , let A_p be its translate by p . The top hat transform measures the extent by which in a given gray-level image I the gray-levels of pixels in A_p are higher than those in the portion surrounding A_p . One way is to take the arithmetical difference $I - I A /$ between I and the opening $I A$ of I by A ; in a dual form, one takes the arithmetic difference $I A / - I$ between the closing $I A$ of I by A and I . Another method considers a second structuring element B which forms a ring surrounding A , and at each pixel one computes the arithmetic difference between a "representative" gray-level in A_p (either minimum, maximum, median, or average) and a "representative" gray-level in B_p (either minimum, maximum, median, or average). See closing, opening, structuring element.

top surface imaging : top surface imaging a resist imaging method whereby the chemical changes of exposure take place only in a very thin layer at the top of the resist.

top-down development: top-down development an application development methodology that begins at a high level of abstraction and works through successively more detailed levels.

topological map : topological map an organization of nodes in which the similarity of any two nodes is a function of their distance from each other on the map. For example, with a 2-dimensional grid, Euclidean distance can be used as the distance between two nodes. Used in the self-organizing map.

topology: A branch of geometry concerned with the way in which figures are connected, rather than their shape or size. These geometric factors are unaffected by deformation.

Topology: The physical or geometric configuration of a local area network.

topology preserving skeleton : topology preserving skeleton result of an operation transforming a digital figure into a one-pixel wide skeleton having the same "topology," in other words, whose connected components and holes correspond in a one-to-one way with those of the figure. This is generally achieved by homotopic thinning. The medial axis transform or distance skeleton preserves the topology of a figure (binary image) in the Euclidean case, but not in the digital case; the same defect arises with the morphological skeleton. See also thinning, thickening.

Topping cycle: A boiler produces steam to power a turbine-generator to produce electricity. The steam leaving the turbine is used in thermal applications such as space heating and/or cooling or delivered to other end user(s).

Torn Surface: A deep longitudinal rub mark resulting from abrasion by extrusion or drawing tools.

tornadotron : tornadotron a gyrotron with a simple helical beam.

toroid: A circular, donut shaped core used in transformers.

Toroid Choke: An electronic component constructed of a ferrite ring wrapped with copper wire, used to reduce RFI generated by an electronic switching device.

Toroidal Current Transformers: A Toroidal Current Transformer is a transformer that uses a toroid (donut-shaped) ferrous core. Toroidal cores are more efficient than rectangular cores but also more expensive to produce.

toroidal deflection yoke : toroidal deflection yoke magnetic deflection yoke wound on a toroid core containing a split winding; one-half winding placed on opposite sides of the toroid. The yoke winding interconnection creates an opposing flux from each winding within the toroid and an aiding flux within the toroid inner diameter that causes the deflection of the electron beam. The toroid deflection yoke has a low inductance for compatibility with semiconductor deflection systems and permits precise control of the winding placement to obtain a uniform magnetic deflection field. A horizontal toroidal deflection yoke, in combination with the in-line electron gun, permits the construction of an inherent self-converging color TV display system.

Torpedo Car: The hot metal car used to carry molten iron from the blast furnace to steelmaking units.

torque: torque the product of a force acting at a distance. The output of an electric motor.

torque: product of a force and the perpendicular distance between the force and the axis of action.

Torque: the twisting force exerted by the shaft of a motor. Torque is measured in pound inches, pound feet, and on small motors, in terms of ounce inches.

torque angle : torque angle the displacement angle between the rotor and rotating magnetic flux of the stator due to increases in shaft load in a synchronous machine. See also power angle.

Torque Limiting Clutches: A Torque Limiting Clutch protects a drive train from mechanical overload. This can be done either by failure of a shear pin or slipping of friction disc interface.

Torque Motor: A coil of wire and bobbin assembly used in a servo valve that causes the internal mechanism of the servo valve to be offset when current passes through the coil.

torque pulsation : torque pulsation oscillating torque produced by the interaction between the air gap flux, consisting mainly of the fundamental component, and the fluxes produced by harmonics in the rotor. Torque pulsations can stimulate complex mechanical vibrations that can flex and damage rotor and turbine elements.

torque ripple : torque ripple in variable speed motor drives, refers to the torque not being smooth as the rotor moves from one position to another. Torque ripple may be produced from space harmonics within the machine or time harmonics generated by the supply.

Torque Sensors: Torque Sensors is a load cell that converts torsional strain into an electrical signal and is used to measure torque on a shaft. They are often incorporated with as part of a torque wrench to measure the tightening torque of a fastener.
torque servo : torque servo a servo where the output torque is the controlled variable and the operating speed depends on the load torque. See also servo.

Torque Test: A test designed to ascertain the stiffness of a material under given environmental conditions.

Torque Transducers: A Torque Transducer is a load cell that converts torsional strain into an electrical signal and is used to measure torque on a shaft.

torr: Unit of pressure. 1 torr = 1 mm of Hg = 133.3 pa

torus : torus a donut-shaped magnetic core used in electric transformers.

Total discoveries: The sum of extensions, new reservoir discoveries in old fields, and new field discoveries, that occurred during the report year.

total efficiency : total efficiency dimensionless ratio of the total RF power delivered to a load versus the total DC and RF incident power into the amplifier.

Total energy system: See 'photovoltaic-thermal system.'

Total gas in storage: The sum of base gas and working gas.

Total harmonic distortion (thd): The measure of closeness in shape between a waveform and its fundamental component.

total harmonic distortion disturbance level : total harmonic distortion disturbance level an electromagnetic disturbance level due to all emissions from equipment in a system. This is expressed as a ratio of the RMS value of the harmonic content to the RMS of the fundamental and is calculated as a percent-age of the fundamental component.

total harmonic distortion THD : The effective value of all the harmonics taken together expressed as a ratio of the effective value of the fundamental.

total internal reflection: total internal reflection when light is incident on a boundary between two media from the one having the higher refractive index, n_1 , then the angle of refraction is larger than the angle of incidence. At an angle of incidence times $\sin n_2 = n_1$ the light is totally reflected and remains in the denser medium.

Total internal reflection: The trapping of light by refraction and reflection at critical angles inside a semiconductor device so that it cannot escape the device and must eventually be absorbed by the semiconductor.

Total liquid hydrocarbon reserves: The sum of crude oil and natural gas liquids reserves volumes.

Total Natural Gas Storage Field Capacity (Design Capacity): The maximum quantity of natural gas (including both base gas and working gas) that can be stored in a natural gas underground storage facility in accordance with its design specifications, the physical characteristics of the reservoir, installed compression equipment, and operating procedures particular to the site. Reported storage field capacity data are reported in thousand cubic feet at standard temperature and pressure.

Total operated basis: The total reserves or production associated with the wells operated by an individual operator. This is also commonly known as the "gross operated" or "8/8ths" basis.

total reflection : total reflection the phenomenon where a wave impinging on a certain medium interface is totally reflected without being damped by and without penetrating the boundary medium.

Totally Enclosed: Apparatus with an integral enclosure so constructed that, while not airtight, the enclosed air has no deliberate connection with external air except for draining and breathing.

totem-pole output : totem-pole output the standard output of transistor-transistor logic (TTL) gates consisting of two bipolar junction transistor in series between the source voltage and common. In normal operation, either one is driven into saturation while the other is at cutoff; alternating these conditions changes the output logic level.

Touch Dimming: The ability of a dimmer to control lighting levels by sensing the touch of a hand to its sensor plate.

touch input : touch input a means for selecting a location on the surface of the display unit using a variety of technologies that can respond to the placing of a finger or other pointing device on the surface. These are essentially data panels placed either on the display surface or between the user and the display surface.

Touch potential: The voltage between the energized object and the feet of a person in contact with the object. It is equal to the difference in voltage between the object and a point some distance away. It should be noted that the touch potential could be nearly the full voltage across the grounded object if that object is grounded at a point remote from the place where the person is in contact with it. For example, a crane that was grounded to the system neutral and that contacted an energized line would expose any person in contact with the crane or its uninsulated load line to a touch potential nearly equal to the full fault voltage.

touch screen : touch screen a specialized type of video display where a control circuit is actuated when areas of the display are touched by one's finger or similar object. The types of touch screen technology include capacitive overlay, force vector, guided acoustic wave, resistive overlay, scanning infrared, strain gage and surface acoustic wave.

Touch Screen Displays: Touch Screen Displays allow an operator to communicate to a device by touching different areas on a screen instead of using a mouse or keyboard.

touch voltage: The potential difference between the ground potential rise (GPR) and the surface potential at the point where a person is standing where at the same time having his hands in contact with a grounded structure. GPR defined as the maximum voltage that a station grounding grid may attain relative to a distant grounding point assumed to be at the potential of remote earth. The touch voltage could be from hand to hand also.

touch voltage : touch voltage used in power system safety studies, the voltage between any two conductive surfaces which

can be touched simulta-neously by a person.

Tow Axis Tracking (Photovoltaic): A photovoltaic system capable rotating on two axes (vertical and horizontal) to track the sun for maximum efficiency of the solar array.

Tower: 1) Consist of sets of mounted rolls. The top rolls are in a fixed position but the bottom rolls are mounted on a moveable carriage. The carriage is controlled by cables that can move the carriage up or down in the tower. When the carriage is lowered extra strip is stored in the tower. This strip is used when a weld is being made. 2) Tower for loops of steel (#5 Galvanize); allows entry end to shut down without stopping production; also a tower at which allows the coating to freeze on the steel.

tower : tower a structure for elevating electric transmission lines, distinguished from a pole cf by its greater height and structural com-plexity.

Tower Oven: Vertical, continuous core oven with suspended shelves attached to sprocket driven chains.

tower : A structure (usually steel) found along transmission lines which is used to support conductors.

TP: Parallel tinsel cord. All-rubber insulation and jacket over two extremely flexible conductors. Light duty, attached to appliances of 50W or less. For use in damp locations in lengths of eight feet or less.

TPE: Thermoplastic Elastomer

TPI: Tap Position Indicator for transformers.

TPO: Same construction as type PO but with extra flexible tinsel conductors. 125V

TPT: Same as TP but all-thermoplastic insulation and jacket. 125V

Trace: Extremely small quantity of an element, usually too small to determine quantitatively.

trace: The visual representation of an individual signal on a CRT.

Trace Heating: Trace Heating is a technique in which a flexible heating element is used to heat along the entire length of a piping system. Some radiant floor heating systems are trace heating systems.

trace length : trace length the physical distance be-tween electronic components connected by a circuit path.

trace loading : trace loading the electronic load on a cir-cuit path.

Trace. : The visible or recordable path on the screen on target by the moving spot. Also called "line" and "scan".

Tracer Steam: Companion line to help maintain proper oil temperature.

Tracer Stripe: When more than one color coding stripe is required, the first, or widest, stripe is the base stripe, the other, usually narrower stripes, being termed tracer stripes.

Tracer. : In message relay. The process by which communications staffs "trace" a signal message to ascertain the reason for delay or loss.

tracing : tracing in software engineering, the pro-cess of capturing the stream of instructions, referred to as the trace, for later analysis.

track : track a narrow annulus or ring-like region on a disk surface, scanned by the read/write head during one revolution of the spindle; the data bits of magnetic and optical disks are stored sequentially along these tracks. The disk is covered either with concentric rings of densely packed circular tracks or with one continuous, fine-pitched spiral track. See also magnetic disk track, optical disk track, magnetic tape .

track buffer : track buffer a memory buffer embedded in the disk drive. It can hold the contents of the current disk track.

Track correlation.: Correlating track information for identification purposes using all available data.

Track telling. : The process of communicating air surveillance and tactical data information between command and control systems or between facilities within the systems. Telling may be classified into the following types: a.Back tell. The transfer of information from a higher to a lower echelon of command. b. Cross tell. The transfer of information between facilities at the same operational level. Also called lateral tell. c. Forward tell. The transfer of information to a higher level of command. d lateral tell. See cross tell. e. Overlap tell. The transfer of information to an adjacent facility concerning tracks detected in the adjacent facilities area of responsibility. f. Relateral tell. The relay of information between facilities through the use of a third facility. This type of telling is appropriate between automated facilities in a degraded communications environment.

trackball : trackball the earliest version of an input device using a roller ball, differing from the mouse in that the ball is contained in a unit that can remain in a fixed position while the ball is rotated. It is sometimes referred to as an upside-down mouse, but the reverse is more appropriate, as the trackball came first.

Tracking: Side to side movement of the strip through any operating unit.

tracking: Tracking is the formation of a permanent conducting path across a surface of the insulation, and in most cases the conduction (carbon path) results from degradation of the insulation itself leading to a bridge between the electrodes. Tracking occurs in organic materials.Traditionally, utilities have assumed the obligation to serve in return for an exclusive monopoly franchise.

tracking : tracking conduction along the surface of an insulator and especially the establishment of a carbonized conduction path along the surface of a polymer insulator.

Tracking (1). : Precise and continuous position-finding of targets by radar, optical or other means.

Tracking (2). : The process of pointing an earth station/terminal antenna at a satellite and accurately following its drift rate.

Tracking Array (Photovoltaic): A photovoltaic array that follows the path of the sun to maximize the solar incident on the photovoltaic surface. The two most common orientations are (1) One axis tracking where the array tracks the sun east to west and (2) Two axis tracking where the a

Tracking Photovoltaic: Photovoltaic array that follows the path of the sun to maximize the solar radiation incident on the Photovoltaic surface. The two most common orientations are (1) one axis where the array tracks the sun east to west and (2) two-axis tracking where the array points directly at the sun at all times. Tracking arrays use both the direct and diffuse sunlight. Two-axis tracking arrays capture the maximum possible daily energy.

Track-while-scan. : The process whereby a radar system produced tracking data on a target or targets while simultaneously being used for surveillance or control.

Tractor Loader Buckets: Tractor Loader Buckets are steel buckets that are used to scrape, scoop, and move soil and rock for excavation and earth moving.

Traffic (communication) . : All transmitted and received messages.

Traffic analysis. : The analysis of the external characteristics of signal (message) communications and related material for the purpose of obtaining information concerning the enemy order of battle, operational activity, plans and the organization of a communications system.

traffic channel : traffic channel a channel in a communication network that is used to carry the main information or service, which is typically voice, data, video, etc. Compare with control channel.

traffic decomposition : traffic decomposition the decomposition approximates the steady-state behavior of the traffic by "decomposing" it into long- and short-term behavior.

Traffic flow security. : The protection resulting from features, inherent in some crypto equipment, which conceal the presence of valid messages on communications circuits, normally achieved by causing the circuit to appear busy at all times.

Traffic Mark: Abrasion which results from relative movement between contacting metal surfaces during handling and transit. A dark color from the abrasively produced aluminum oxide is usually observed. A mirror image of a traffic mark is observed on the adjacent contacting surface.

Trailerload: quantities of commodities, including primary and secondary metals, that amount to as much as 44,000 pounds each, which is the standard weight limit on U.S. highways.

trailing edge : trailing edge when a pulse waveform switches from high to low, it is called a trailing edge.

trailing-edge triggered : trailing-edge triggered a device that is activated by the trailing edge of a signal.

trainability : trainability the property of an algorithm or process by which it can be trained on sample data and thus rendered adaptable to different situations. See also training procedure, supervised learning, unsupervised learning.

training algorithm of self-generating neural network : training algorithm of self-generating neural network given as follows:1. Initially, the network contains nothing. When the first training example comes in, the system creates a neuron for it. 2. When a new training example comes in, the neurons in the hierarchy are examined for similarity to the training example, hierarchically from the root(s). Each time, the last winner and all the neurons in its child networks are examined to find a new winner. If the new winner is the old winner, the examination stops and the old winner is the final winner; otherwise, the new winner and its child network are examined until a leaf node is found to be the winner. During this process, the weights of all the winners and their neighbors should be updated according to the same rule as that of self-organizing network. After the final winner is found, the network structure should be updated according to the following rules: If the winner is a nonterminal node (i.e., it has a child network), generate only one neuron, copy the training vector into it, and put it in the child network of the updated winner.4. Repeat the above process until all the training examples are exhausted. One training epoch has been completed at this point, and more than one epoch may be required for the network of neural networks to reach an equilibrium. See also self-generating neural network.

Training pattern. : The sequence of signals used in training.

training procedure : training procedure the method of calculating the set of free parameters of a function given a set of training data.

training sequence : training sequence a sequence of transmitted symbols known at the receiver, which is used to train an adaptive equalizer or echo canceller.

training set : training set data used as the basis for determining the best set of free parameters. Typically used in iterative training algorithms.

Training time. : The interval required to complete training.

Training. : The process in which a receiving modem achieves equalization with a transmitting modem.

trajectory : trajectory a path on which a time law is specified for instance in terms of velocities and/or accelerations at each point.

trajectory planning : trajectory planning a trajectory planning algorithm is the path description, the path constraints imposed by manipulator dynamics as inputs and position, velocity, and accelerations of the joint (end-effector) trajectories as the outputs. See also path.

Tramp: Combustion air.

Tramp Element (Trace): Contaminant in the components of a furnace charge, or in the molten metal or casting, whose presence is felt to be either unimportant or undesirable to the quality of the casting.

Transaction processing. : A real-time of data processing in which individual tasks or items of data (transactions) are processed as they occur - with no primary editing or sorting.

Transceiver: The device combined of transmitter and receiver

transceiver : transceiver a device that can serve as both transmitter and receiver.

Tranco: A for profit Power Transmission Company.

transco : transco contraction of "transmission company," a firm which owns electric power transmission lines but does not engage in power generation or distribution.

transconductance : transconductance a quantity used to specify a field-effect transistor, defined as the differential change in drain current upon a differential change in gate voltage.

Transducer: A device used to convert input energy of one form into output energy of another.

Transducer: A device for converting an electrical signal into a usable direct current or voltage for measurement purposes.

transducer: A device to condition and transform a specific physical quantity to a specific variable output electrical signal proportional to the input signal. Typical inputs include variable pressure, level, voltage or current. A transducer must be specifically designed to be compatible with the input/output requirements of the total system.

Transducer: the device used to convert the form of energy into another form. Energy may be electrical or mechanical or any other type.

transducer : transducer a device that converts a physical quantity into an electrical signal. Typically, transducers are electromechanical energy conversion devices used for measurement or control. Transducers generally operate under linear input-output conditions and with relatively small signals. Examples include microphones, pickups, and loudspeakers.

Transducer Error: The actual value of the output minus the intended value of the output expressed algebraically.

Transducer Factor: The product of the current transformer ratio (CTR) and the voltage transformer ratio (VTR). Also called the power ratio.

Transducer Factor: Transducer Factor or power ratio is the product of the current transformer ratio and the voltage transformer ratio.

transducer gain : transducer gain ratio of the power delivered to the load to the power available from the source.

Transducer with Live Zero: A transducer which gives a predetermined output other than zero when the measurand is zero.

Transducer with Suppressed Zero: A transducer whose output is zero when the measurand is less than a certain value.

Transfer: Transferring strip from #1 to #2 reel on a continuous unit.

Transfer capability: The overall capacity of interregional or international power lines, together with the associated electrical system facilities, to transfer power and energy from one electrical system to another.

Transfer Cars: Electric rail cars which move coils in the Tin Mill from the C.A. lines to the Temper Mill stock floor, or from the DR Mills to the Plater stock floor. (a.k.a. the Hoopey railroad.)

transfer characteristic curve : transfer characteristic curve one of a set of device curves derived from the expression for the output current as a function of the input voltage.

Transfer Function: A mathematical expression of the relationship between the outgoing and incoming signals of a process or control element.

transfer function: The transfer function of a circuit is the ratio of the response to the input.

transfer function : transfer function (1) a mathematical model that defines the relationship between the output and the input of a linear system. It is usually expressed as the ratio of the Laplace transform of the output function divided by the Laplace transform of the input function. A typical transfer function model has the form

Transfer Ladle: A ladle that may be supported on a monorail or carried in a shank and used to transfer metal from the melting furnace to the holding furnace or from furnace to pouring ladles.

Transfer orbit.: The path travelled between the parking orbit of a satellite after launching and its planned operational orbit.

Transfer price: The monetary value assigned to products, services, or rights conveyed or exchanged between related parties, including those occurring between units of a consolidated entity.

Transfer Pump: A pump used to move hydraulic oil from one storage tank to another.

Transfer Rate: Rate at which data is moved from source to destination.

transfer rate : transfer rate a measure of the number of bits that can be transferred between devices in a unit of time.

Transfer Switches: A Transfer Switch is used to switch power to a device from a primary to secondary source, which is often a back up generator. They are used in critical situations where power interruption can not be tolerated.

transfer time : transfer time in a hierarchical memory system, the time required to move a block between two levels.

transferred voltage: This is a special case of the touch voltage where the voltage is transferred into or out of the station by a conductor grounded at a remote point or at the station ground, respectively.

Transferring Boilers: Term used for the process of changing from primary operating boiler to the standby boiler.

transform: transform the process of converting data from one form into another. Often used to signify a system that rotates the coordinate axes. Examples of transforms include the Fourier transform and the discrete Fourier transform. A discrete linear transform can be described as a product of the input vector with a transform matrix. See also transform kernel.

transform coding : transform coding a method for source coding similar to subband coding. The input signal is transformed into an alternative representation, using an invertible transform (e.g., the Fourier transform), and the quantization is then performed in the transform domain. The method utilizes the fact that enhanced compression can then be obtained by focusing (only) on "important" transform parameters.

transform kernel : transform kernel a function that is multiplied with an input function: the result of which is integrated or summed to form a transformed output. For example in the definition of the continuous Fourier transform the kernel is $e^{-j\omega t}$ and in the definition of the discrete Fourier transform the kernel is $e^{-j2\pi n m/N}$.

transform VQ : transform VQ See transform vector quantization.

Transformation: A constitutional change in a solid metal, e.g., the change from gamma to alpha iron, or the formation of pearlite from austenite.

transformation: Change of one form variable or substance into another.

Transformation (Temperature) Range: Those ranges of temperature within which austenite forms during heating and transforms during cooling. The two ranges are distinct, sometimes overlapping but never coinciding. The limiting temperatures of these ranges depend on the composition of the alloy and on the rate of change of temperature, particularly during cooling.

Transformation Range: Those ranges of temperature within which austenite forms during heating and transforms during cooling. The two ranges are distinct, sometimes overlapping but never coinciding. The limiting temperatures of the ranges depend on the composition of the alloy and on the rate of change of temperature, particularly during cooling.

transformation ratio: transformation ratio dimensionless ra-tio of the real parts of the load and source impedance.

Transformation Temperature: The temperature at which a change in phase occurs. The term is sometimes used to denote the limiting temperature of a transformation range. The following symbols are used for iron and steels: Ac(cm) In hypereutectoid steel, the temperature at which the solution of cementite in austenite is completed during heating. Ac1 The temperature at which austenite begins to form during heating. Ac3 The temperature at which transformation of ferrite to austenite is completed during heating. . Ac4 The temperature at which austenite transforms to delta ferrite during heating. . Ae(cm) Ae1 Ae3 Ae4 The temperatures of phase changes at equilibrium. . Ar(cm) In hypereutectoid steel, the temperature at which precipitation of cementite starts during cooling. . Ar1 The temperature at which transformation of austenite to ferrite or to ferrite plus cementite is completed during cooling. . Ar3 The temperature at which austenite begins to transform to ferrite during cooling. . Ar4 The temperature at which delta ferrite transforms to austenite during cooling. . M(s) (or Ar) The temperature at which transformation of austenite to martensite starts during cooling. . M(f) The temperature at which martensite formation finishes during cooling. .NOTE: All these changes except the formation of martensite occur at lower temperatures during cooling than during heating, and depend on the rate of change of temperature.

transform-based heirarchical coding : transform-based heirarchical coding use of heirarchically compacted image energies to allow recognizable reconstruction with a relatively small amount of data.

transformed circuit : transformed circuit an original circuit with the currents, voltages, sources, and pas-sive elements replaced by transformed equiv-alents.

Transformer: A device used to transfer electric energy from one circuit to another, especially a pair of multiply wound, inductively coupled wire coils that effect such a transfer with a change in voltage, current, phase, or other electric characteristic. Generally used to convert one voltage-current relationship to another. Step-up transformer, increase the voltage while decreasing the current, and step-down transformer decrease the voltage while increasing the current.

Transformer: An electrical device for changing the voltage of alternating current.

Transformer: An electromagnetic device used to change the voltage in an alternating current electrical circuit.

transformer: A static electric device consisting of a single winding, or two or more coupled windings, used to transfer power by electromagnetic induction between circuits at the same frequency, usually with transformed values of voltage and current.

Transformer: Converts the generator's low-voltage electricity to higher voltage levels for transmission to the load center, such as a city or factory.

Transformer: The static device which transforms electrical energy from one circuit to another without any direct electrical connection and with the help of mutual induction between two windings. It is used to step up or step down the voltage.

Transformer: A device for transferring energy in an alternating current system from one circuit to another, consisting of two independent electric circuits linked by a common magnetic circuit.

transformer : transformer a device that has two or more coils wound on an iron core. Transformers provide an efficient means of changing volt-age and current levels, and make the bulk power transmission system practical. The transformer primary is the winding that ac-cepts power, and the transformer secondary is the winding that delivers power. The primary to secondary voltages are related by the turns ratio of the coils. The corresponding currents are related inversely by the same ratio.

Transformer - Underground: An underground transformer is essentially the same as an aboveground transformer, but is constructed for the particular needs of underground installation.

Transformer Bank: See "Bank".

transformer differential relay : transformer differential relay a differ-ential relay specifically designed to protect transformers. In particular, transformer dif-ferential relays must deal with current trans-former turns ratio error and transformer in-rush and excitation current.

transformer fuse : transformer fuse a fuse employed to iso-late a transformer from the power system in the event of a transformer fault or heavy over-load.

Transformer Insulation: This is the material that is used to provide electrical insulation between transformer windings at different voltage levels and also between the energized parts and the metal tank of the transformer. Generally, for large transformers used in power applica

Transformer Ratio: When used in reference to Instrument Transformers, this is simply the ratio of transformation of one or more transformers used in the circuit. If both Cts and VTs are included, the transformer ratio is the product of the CT and the VT. For example, assume

Transformer Rectifiers: A Transformer Rectifier convert AC power to DC power. It consists of a transformer and a series of

diodes and may also employ additional smoothing circuitry.

Transformer Vault: A transformer vault is an underground structure or room in which power transformers, network protectors, voltage regulators, circuit breakers, meters, etc. are housed.

transformer vault : transformer vault a fireproof enclosure in which power transformers containing oil must be mounted if used underground or in-doors.

Transformer Voltage Regulators: Mechanisms that use multiple voltage taps on a transformerlike device to adjust voltage on a power line. As the voltage increases or decreases on the circuit, sensors in the voltage regulator call for the input or output of the regulator to connect to di

Transient: See "Voltage Transient"

transient: A phenomenon of a non-repetitive nature caused by a sudden change in conditions that persist for a relatively short time after the change.

transient : transient (1) the behavior exhibited by a linear system that is operating in steady state in moving from one steady state to another. For stable systems, the transient will decay while for unstable system it will not, and thus the latter never reach another steady-state operation. See also settling time and time constant. (2) any signal or condition that exists only for a short time. (3) an electrical disturbance, usually on a power line. (4) refers to momentary overvoltages or voltage reductions in an electric power sys-tem due to lightning, line switching, motor starting, and other temporary phenomena.

transient current : transient current the fault current that flows during the transient period when the machine apparent impedance is the transient impedance.

transient fault : transient fault a fault that can appear (e.g., caused by electrical noise) and disap-pear within some short period of time.

transient impedance : transient impedance the series impe-dance that a generator or motor exhibits following the subtransient period but prior to the steady-state situation.

transient open-circuit time constant : transient open-circuit time constant See quadrature-axis transient open-circuit time constant and direct-axis transient open-circuit time constant.

transient operation : transient operation a power system oper-ating under abnormal conditions because of a disturbance.

transient reactance: transient reactance the reactance offered for the transient currents in synchronous ma-chines. Referred to by the symbol X_{s0} , the transient reactance is a function of the sta-tor frequency and the transient inductance. X_{s0} is comparatively smaller in comparison to the steady-state inductive reactance of the machine.

transient response: The temporary behaviour of a circuit due to an external excitation, which will die out with time.

transient stability : transient stability the ability of a power system to remain stable following a system disturbance.

transient suppressor : transient suppressor a device connected to a piece of sensitive electrical equipment to reduce the amplitude of transient voltage excursions, thus protecting the equipment.

Transistor: A small electronic semiconductor device having at least three electrical contacts, used in a circuit as an amplifier or a switch. See BJT, JFET, MOSFET.

transistor: A semi-conductor device capable of amplification.

Transistor Arrays: A Transistor Array is a two or more transistors in a single device and are used for signal filtering, amplification, or function generation.

transistor–transistor logic (TTL) : transistor–transistor logic (TTL) a tran-sistor technology in which the output of a logic gate is amplified in going from 0 to 1 as well as from 1 to 0.

Transit Rust: This rust defect occurs when strip or plate becomes wet from rain or snow during transit; or from damaged containers exposing plate in transit. Strip or plate will generally exhibit a pattern of rust on the edge going inwards due to capillary action.

transit time : transit time the average time in seconds required for an electron to move between two specified surfaces.

transition band : transition band the portion of the fre-quency spectrum where a filter changes from a stop filter to a pass filter or vice versa. The steepness of the transition band is often a measure of the quality of a filter, where the pass and stop bands are critical. A longer fil-ter length generally implies that the filter can have a steeper transition band to a similarly shaped shorter length filter.

transition lifetime : transition lifetime coefficient represent-ing the time after which a population of atoms in an excited state may be expected to fall to $1/e$ of its initial value due to stimulated and spontaneous processes as well as inelas-tic collisions. See also spontaneous lifetime, transition rate.

transition rate : transition rate rate at which atoms un-dergo transitions from one level to another due to stimulated and spontaneous processes as well as inelastic collisions; reciprocal of transition lifetime.

transition region : transition region the region of the I-V curve(s) of a device between the ohmic region and the current source region, in which the slope of the I-V curve(s) is rapidly changing as it transitions from the resistance region to the current source region.

Transition Temperature: An arbitrarily defined temperature that lies within the temperature range in which metal fracture characteristics (as usually determined by tests of notched specimens) change rapidly, such as from primarily fibrous (shear) to primarily cleavage.

translation : translation a geometric transformation which simply adds an offset to the pixel co-ordinates of an image.

translation lookaside buffer (TLB) : translation lookaside buffer (TLB) es-sentially a small fully associative address-

cache used to provide fast address translation for the most used virtual addresses. The TLB is associatively searched on a virtual address, and in the event of a hit, it returns the corresponding real address. In the event of a miss, if the addressed page is in main memory, then a TLB entry is made for it; otherwise the page is first brought in after a page fault and then the TLB entry is made. In either case, the TLB eventually returns a real address. The TLB may be fully associative, set associative, or hashed.

translator : translator an unattended television or FM broadcast repeater that receives a distant signal and retransmits the picture and/or audio locally on another channel.

transmission: The movement of large quantities of electric energy.

transmission : transmission (1) the act of sending information from one location to another.(2) transformation of an optical wave incident on a surface that passes a portion of the wave to the medium behind the surface. (3) that class of electric power system work which is concerned with the transport of electric power from the generator to the area of consumption. The circuits of interest typically extend at the generating station and terminate at the local substation.

Transmission (electric): An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems. NERC definition

Transmission (electric) (verb): The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Transmission and distribution loss: Electric energy lost due to the transmission and distribution of electricity. Much of the loss is thermal in nature.

transmission and distribution losses, T & D losses : Losses that result from the friction that energy must overcome as it moves through wires to travel from the generation facility to the consumer. Because of losses, the demand produced by the utility is greater than the demand that shows up on the consumer bills.

transmission and distribution system, T & D system: An interconnected group of electric transmission lines and associated equipment for the movement or transfer of electric energy in bulk between points of supply and points at which it is transformed for delivery to the ultimate consumers.

transmission and distribution T & D: The process of delivering electricity from generation plants to homes and businesses. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Transmission authentication. : See authentication, transmission.

transmission block. : A sequence of continuous data characters or bytes transmitted as a unit, over which a coding procedure is usually applied for synchronisation or error control purposes.

Transmission Bus: Transmission buses are steel structure arrays of switches used to route power in a substation.

Transmission circuit: A conductor used to transport electricity from generating stations to load.

transmission coefficient : transmission coefficient a number that describes the relative amplitude and phase of the transmitted wave with respect to the incident wave. The term is usually used in the context of wave transmission at a material interface or transmission line.

Transmission constraint (electric): A limitation on one or more transmission elements that may be reached during normal or contingency system operations. NERC definition

Transmission Couplings: Transmission Couplings are used to mechanically connect rotating shafts. Many designs have provisions for shaft misalignment and may also use elastomeric dampers to reduce vibration transmission.

transmission grating : transmission grating a diffraction grating that operates in transmission, i.e., the diffracted light is obtained by shining light through the grating.

Transmission identification (ti). : A combination of letters and figures used to identify a transmission of a channel between two stations. It consists of the following components in sequence:a.) Station and channel designator. Three letters which identify one or both of the stations and a specific channel between the two stations. These are as follows:(1). Either two letters to identify one or both of the stations; one letter to identify a specified channel, or, (2). Three letters to represent collectively one of the stations and a specific channel.b.)Channel serial. Three numeral characters which serve number each transmission sequentially and which start at one (001) on a daily basis.

Transmission line: A set of conductors, insulators, supporting structures, and associated equipment used to move large quantities of power at high voltage, usually over long distances between a generating or receiving point and major substations or delivery points.

transmission line : transmission line (1) an arrangement of two or more conductors used to convey electromagnetic energy from one point to another.(2) conductive connections that guide signal power between circuit elements.

Transmission line (electric): A system of structures, wires, insulators and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV, and are capable of transmitting large quantities of electricity over long distances. NERC definition

transmission line coupler : transmission line coupler passive coupler composed of two or more transmissions spaced closely together where the proximity of the transmission lines allows signals to be coupled or transferred in part from one line to the other. The electrical length of the transmission lines is usually one quarter of a wavelength.

transmission line filter : transmission line filter a microwave device that is made up of sections of transmission lines so as to

act as a filter in the mi-crowave frequency range.

transmission line measurement (TLM) : transmission line measurement (TLM) an experimental technique to measure the specific contact resistance of a metal ohmic contact on a semiconductor with a set of vari-able spaced transmission lines.

transmission line parameters : transmission line parameters parame-ters that describe the electrical response of a transmission line. These consists of one de-scribing the characteristic impedance () and another describing the complex propagation constant (γ). The complex propagation con-stant is sometimes defined independently in terms of two separate parameters, one defin-ing the real part () and a second one defining the imaginary part () of the complex con-stant.

Transmission lines: Transmit high-voltage electricity from the generation source or substation to another substation in the electric distribution system.

transmission lines : Heavy wires that carry large amounts of electricity over long distances from a generating station to places where electricity is needed. Transmission lines are held high above the ground on transmission towers.

Transmission medium. : Any material substance that can be or is used for the propagation of signals, usually in the form of modulated radio, light or acoustic waves, from one point to another, such as: optical fibre, cable, or bundle; a wire; a dielectric slab; water; or air. By extension, free space can also be considered as a transmission medium for electromagnetic waves.

Transmission network: A system of transmission or distribution lines so cross-connected and operated as to permit multiple power supply to any principal point.

Transmission operator (electric): The entity responsible for the reliability of its localized transmission system, and that operates or directs the operations of the transmission facilities. NERC definition

Transmission owner (electric): The entity that owns and maintains transmission facilities. NERC definition

Transmission section (communications). : One of two or more portions of a long message, each of which is transmitted separately. All transmission sections of the same complete message use the same date-time group.

Transmission security (transec). : Component of communications security, (comsec) that results from all measures designed to protect transmissions from interception and exploitation by means other than cryptoanalysis.

Transmission Service Provider (electric): The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements. NERC definition

Transmission System: Normally, the highest voltage network of an electric utility system. This is the portion of the system that carries high power over the longest distances. Typically operating at voltages in excess of 100 kV, and most usually at 200 kV and above.

Transmission System: The system designed to transfer the signals from one place to another area or at broad area. The signals may be electrical optical or radio signals.

transmission system : transmission system a transmission sys-tem transfers the motion from the actuator to the joint.

Transmission system (electric): An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers or is delivered to other electric systems.

transmission system (Electric) : An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers, or is delivered to other electric systems.

Transmission system. : In telecommunications, assembly of equipment and procedures organized so as to carry bulk information, independently from their sources and sinks, through a network of channels, circuits and trunks.

Transmission type (engine): The transmission is the part of a vehicle that transmits motive force from the engine to the wheels, usually by means of gears for different speeds using either a hydraulic "torque-converter" (automatic) or clutch assembly (manual). On front-wheel drive cars, the transmission is often called a "transaxle." Fuel efficiency is usually higher with manual rather than automatic transmissions, although modern, computer-controlled automatic transmissions can be efficient.

transmissivity : transmissivity a property that describes the transmitted energy as a function of the incident energy of an EM wave and a mate-rial body. The property may be quantified in terms of the magnitude of the transmission coefficient or the ratio of the incident to the transmitted field.

transmit/receive (T/R) switch : transmit/receive (T/R) switch a single-pole double-throw (SPDT) switch, connected to the antenna feed. It is used to prevent de-struction of the receiver from the transmit RF power.

transmittance : transmittance ratio of the complex am-plitude of a transmitted wave to the com-plex amplitude of the corresponding incident wave at a transmitting surface.

transmitter : transmitter equipment used to generate an RF carrier signal, modulate this signal and radiate it into space.

Transmitter (radio). : Apparatus producing radio frequency energy for the purpose of radio communication.

Transmitting utility: A regulated entity which owns and may construct and maintain wires used to transmit wholesale power. It may or may not handle the power dispatch and coordination functions. It is regulated to provide non-discriminatory connections, comparable service, and cost recovery.

transmitting utility : A regulated entity which owns, and may construct and maintain, wire used to transmit wholesale power. It is regulated to provide non-discriminatory connections, comparable service and cost recovery. Any electric utility, qualifying cogeneration facility, qualifying small power production facility, or Federal power marketing agency which owns or operates electric power transmission facilities which are used for the sale of electric energy at wholesale.

Transmutation: Changing atoms of one element into those of another by neutron bombardment, causing neutron capture.

Transparent: Targets that permit transmission of essentially all incident light.

transparent code : transparent code a code in which the complement of every codeword also is a codeword.

transparent mode : transparent mode a mode of a bistable device where an output responds to data input signal changes.

Transponder (1). : A receiver-transmitter which will generate a reply signal upon proper interrogation. See also responder.

transponder (2). : A component of a secondary radar system which receives pulses from a radar set or interrogator and, in response to the received pulse, transmits a pulse or sequence of pulses to enable the craft or beacon incorporating the transponder to be recognized by the interrogating station. Synonymous with responder.

Transport: Movement of natural, synthetic, and/or supplemental gas between points beyond the immediate vicinity of the field or plant from which produced except (1) for movements through well or field lines to a central point for delivery to a pipeline or processing plant within the same state or (2) movements from a city gate point of receipt to consumers through distribution mains.

Transport layer. : The fourth layer in the OSI model; ensures error-free, end-to-end delivery.

Transport Tanks: A Transport Tank is any tank that is designed for transport fluids from one location to another. The tank on a tanker truck is an example of a transport tank.

Transportable communications equipment. : Static communications installations or equipment specifically designed for ease of transportation, rapid assembly and disassembly for operation in a tactical environment.

Transportation agreement: Any contractual agreement for the transportation of natural and/or supplemental gas between points for a fee.

Transportation energy expenditures: See Vehicle fuel expenditures.

Transportation sector: An energy-consuming sector that consists of all vehicles whose primary purpose is transporting people and/or goods from one physical location to another. Included are automobiles; trucks; buses; motorcycles; trains, subways, and other rail vehicles; aircraft; and ships, barges, and other waterborne vehicles. Vehicles whose primary purpose is not transportation (e.g., construction cranes and bulldozers, farming vehicles, and warehouse tractors and forklifts) are classified in the sector of their primary use. Note Various EIA programs differ in sectoral coverage.

Transported gas: Natural gas physically delivered to a building by a local utility, but not purchased from that utility. A separate transaction is made to purchase the volume of gas, and the utility is paid for the use of its pipeline to deliver the gas. Also called "Direct-Purchase Gas," "Spot Market Gas," "Spot Gas," "Gas for the Account of Others", and "Self-Help Gas."

Transporter: The party or parties, other than buyer or seller, owning the facilities by which gas or LNG is physically transferred between buyer and seller.

transposition : transposition (1) the practice of twisting a three-phase power line so that, for example, phase A takes the place on the tower formerly occupied by phase B, phase B takes the place of phase C, and phase C occupies the former position of phase A. (2) a point on a three-phase electric power line where the conductors are physically transposed for purposes of improving circuit balance

transputer : transputer a class of CPU designed and manufactured by Inmos Corporation. The transputer was specifically designed to be used in arrays for parallel processing.

Transshipment: A method of ocean transportation whereby ships off-load their oil cargo to a deep water terminal, floating storage facility, temporary storage, or to one or more smaller tankers from which or in which the oil is then transported to a market destination.

Transuranic element: A very heavy element formed artificially by neutron capture and possibly subsequent beta decay(s). Has a higher atomic number than uranium (92). All are radioactive. Neptunium, plutonium, americium and curium are the best-known.

Transverse Bow: See ?Bow,Transverse?.

Transverse Direction: A direction perpendicular to the direction of working

transverse electric (TE) : transverse electric (TE) referring to fields or waves in which the electric field has nonzero vector components only in the plane perpendicular (transverse) to a specified axis, usually a coordinate axis.

transverse electric mode : transverse electric mode mode having no longitudinal component of the electric field (no component in the direction of propagation). Generally referred to as TE mode.

transverse electric polarization : transverse electric polarization polarization state of a transverse electric (TE) mode. Also called TE polarization.

transverse electric wave : transverse electric wave electromagnetic waves polarized so that the electric field intensity vector is perpendicular to the direction of propagation. The wave solutions have zero electric field component in the direction of propagation. Also known as TE-wave or H-mode.

transverse electromagnetic (TEM) : transverse electromagnetic (TEM) referring to fields or waves in which both the electric and magnetic fields have nonzero vector components only in the plane perpendicular (transverse) to a specified axis, usually a coordinate axis. In a TEM wave, the electric and magnetic fields are perpendicular to each other and to the direction of propagation.

transverse electromagnetic mode : transverse electromagnetic mode electromagnetic wave propagation mode in which electric and magnetic fields are transverse to the direction of propagation (i.e., no radial field components). TEM mode propagation is a characteristic of antenna radiation in the far-field and of transmission-line propagation below the cutoff frequency

of the higher order modes.

transverse electromagnetic wave : transverse electromagnetic wave the electric and magnetic field components along in the direction of propagation are zero. Ab-breviated TEM wave.

transverse excitation : transverse excitation laser pumping process in which the pump power is introduced into the amplifying medium in a direction perpendicular to the direction of propagation of the resulting laser radiation.

transverse magnetic (TM) : transverse magnetic (TM) referring to fields or waves in which the magnetic field has nonzero vector components only in the plane perpendicular (transverse) to a specified axis, usually a coordinate axis.

transverse magnetic wave : transverse magnetic wave the wave solutions with zero magnetic field component in the direction of propagation. Also known as TM wave and E-modes.

transverse mode : transverse mode term (somewhat misleading) used in referring to the transverse structure or indices of the mode of a laser oscillator.

transverse mode-locking : transverse mode-locking forcing the transverse modes of a laser to be equally spaced in frequency and have a fixed phase relationship; useful for obtaining a scanning output beam oscillator.

transverse resonance : transverse resonance a technique used in order to find the modes of closed waveguides.

Transverse Strength: A measurement of strength when the load is applied across the longitudinal flow of the grain of a metal. Certain impurities such as sulphur have a detrimental effect on the transverse strength. This can be minimised by the inclusion modification process.

Transverse Test: A test taken at right angles to the principal direction of rolling or forging.

transverse-excitation-atmospheric (TEA) laser : transverse-excitation-atmospheric (TEA) laser high pressure (sometimes atmospheric pressure or higher) gas laser excited by a discharge in which the current flow is transverse to the direction of propagation of the laser beam; useful for very high power pulsed applications.

trap : trap (1) in microelectronics, an imperfection in a semiconducting material that can capture a free electron or hole. (2) in computers, a machine operation consisting of a hardware-generated interrupt or subroutine call that is invoked in the case of some error condition, for example, encountering an unimplemented instruction code in the instruction stream. See also exception.

Trap, tactical related applications.: Broadcast that allows near real-time elint information to be displayed on atw.

TRAPATT diode : TRAPATT diode acronym for trapped plasma avalanche transit time, a microwave diode that uses a high field generated electron-hole plasma and the resulting diffusion of these carriers to the contacts to create a microwave negative resistance, used as high power, high efficiency RF power sources.

trapezoidal pattern : trapezoidal pattern a signal produced on an oscilloscope by applying an amplitude modulated signal to the horizontal input and the modulating signal to the vertical input. By measuring the maximum and minimum height of the resulting trapezoid, the modulation index may be obtained.

Traveler: See "Stringing Block".

traveling wave : traveling wave an electromagnetic signal that propagates energy through space or a dielectric material.

traveling wave amplifier: traveling wave amplifier the principle of traveling-wave amplification is a technique for increasing the gain-bandwidth product of an amplifier. The input and output capacitances of discrete transistors are combined with lumped inductors and form artificial transmission lines, coupled by the transductions of the devices. The amplifier can be designed to give a flat, lowpass response up to very high frequencies. Sometimes called a traveling wave tube amplifier (TWTA).

traveling wave excitation : traveling wave excitation a method of pumping in which the excitation travels along the lasing axis at or near the velocity of light in order to pump short-lived transitions just prior to stimulation.

travelling waves: Voltage waveforms which effectively travel along a line without a significant change in waveshape.

Traverse: Transfer car used to move coils on and off, or toward and away, from the reel.

Traverse Car: Used to place a coil on the reel or remove coil from the reel. The traverse cars have movement in and out or up and down.

traverse-mode noise: Often used as a synonym for normal-mode noise, it more clearly relates to noise that is the result of the conversion of common-mode noise to normal-mode noise after it passes through a transformer.

Tre, tactical receive equipment. : Enables the trap broadcast to be read direct from the usn uhf fleet satcom.

Tread Plate: Sheet or plate having a raised figured pattern on one surface to provide improved traction.

Treating plant: A plant designed primarily to remove undesirable impurities from natural gas to render the gas marketable.

tree : tree (1) a connected subgraph of a given connected graph G which contains all the vertices of G but no circuits. (2) a form of microscopic cracking which forms in flexible cable insulation. It is typically a precursor of insulation failure. See water tree, electrical tree.

tree code : tree code a code produced by a coder that has memory.

tree coding : tree coding old name for convolutional coding.

tree network : tree network limited connection of subscriber nodes to a central control or distribution unit via other subscriber nodes in the network.

tree of a network: A graph of the network with some of the links removed in such a way so as to leave all the nodes connected together by the graph, but so as not to have any loop left in the network.

tree structure robots : tree structure robots a set of rigid bodies connected by joints forming a topological tree is called a tree structure robot.

tree structured vector quantization: tree structured vector quantization scheme to reduce the search processes for finding the minimum distortion codevector using a tree structured codebook, where each node has m branches and there are $p \log_m N_c$ levels of the tree. Abbreviated tree structured VQ.

Tree Wire: A type of Overhead Distribution Wire that is insulated for momentary contact with tree branches and used as a primary voltage conductor.

Tree Wire: A cable designed to be used in conjunction with insulators, for overhead distribution, having heavy covering which reduces faults due to the touching of tree limbs in heavily wooded areas. (See spacer cable, sometimes one in the same).

tree wire : tree wire a thinly-insulated conductor used in distribution work along tree-lined streets. The insulation is sufficient to with-stand a brush from a tree branch.

Treeing: Water treeing is a form of cable insulation degradation where microchannels, that often appear as a treelike structure in the insulation, develop due to a complex interaction of water, electrical stress, impurities and imperfections. The treelike channel

Trees: A series of vertical spray nozzles arranged in fourteen groups of three nozzles on each tree. The spray from the trees is directed at the rebound panels to maximize particulate removal from the exhaust gases.

tree-search : tree-search algorithms for searching through a tree-structured problem based on a certain cost function, or metric, increment associated with each branch of the tree.

trellis code : trellis code a (channel) coding scheme in which the relation between information symbols and coded symbols is determined by a finite-state machine. The current block of information symbols and the state (in the finite-state machine) uniquely determine the block of coded output symbols as well as the next state. Thus, trellis coding can be viewed as generalized block coding for which the encoder function depends on the current as well as previous blocks of non-overlapping information symbols. In the class of trellis codes we, for example, find convolutional codes, trellis-coded modulation and continuous-phase modulation. See also convolutional code.

trellis coded modulation : trellis coded modulation a forward error control technique in which redundancy is introduced into the source stream through an increase in number of symbol values rather than an increase in the number of symbols. Developed by G. Ungerboeck in the late 1970s, this approach has found widespread use in systems with limited bandwidth.

trellis diagram : trellis diagram in convolutional codes and trellis coded modulation, a graphical depiction of all valid encoded symbol sequences, and the basis for the Viterbi decoding algorithm.

trellis search : trellis search an algorithm for searching through a trellis-structured problem based on a certain cost function, or metric, increment associated with each branch of the trellis.

trellis vector quantization : trellis vector quantization a method for structured vector quantization, where the input signal is classified and coded in a manner described by a mathematical structure known as a "trellis." Abbreviated trellis VQ.

trellis VQ : trellis VQ See trellis vector quantization.

trench isolation : trench isolation condition in which parasitic MOSFETs are formed between transistors sharing a common substrate when polysilicon or metal layers run between the two.

Trepanning: A type of boring where an annular cut is made into a solid material with the coincidental formation of a plug or solid cylinder.

triac: A thyristor that can conduct in both directions. Because of this, it is useful for controlling alternating current. It is the equivalent of two SCRs in parallel with opposite polarities.

TRIAC: (Bidirectional Triode Thyristor) A solid state output device capable of switching alternating current.

triac : triac a power switch that is functionally a pair of converter-grade thyristors connected in anti-parallel. Triacs are mainly used in phase control applications such as dimmer switches for lighting. Because of the integration, the triac has poor reappplied $dv=dt$, poor gate current sensitivity at turn-on, and longer turn-on time. They are primarily used for AC power control with resistive loads, such as in light dimmers.

triangle of forces: If three forces acting at the same point can be represented in magnitude and direction by the three sides of a triangle, taken in order, they will be in equilibrium.

triangular window : triangular window See Bartlett window.

Triaxial: A cable construction, having three coincident axis, such as conductor, first shield and second shield all insulated from one another.

Tributary station (message relay) . : A station electrically connected to a message relay network but normally having no message relay responsibilities.

trickle charge: With the trickle charging process, the battery receives a constant voltage feeding a low current. Constant use of this method dries the electrolyte and corrodes the plate, reducing potential battery service life by up to 50 percent.

Trickle charge: A charge at a low rate, balancing through self-discharge losses, to maintain a cell or battery in a fully charged condition.

Trickle Charge (Battery): A continuous low rate charge that compensates for the self discharge rate of a battery. Also known as Float Charge.

trigger : trigger in oscilloscopes and logic analyzers, the "trigger" signal is used to notify the system that a certain event has occurred, and data acquisition should commence.

trigger level : The instantaneous level that a trigger source signal must reach before a sweep is initiated by the trigger circuit.

trigger : The signal used to initiate a sweep on an oscilloscope and determine the beginning point of the trace.

Trillion Btu: Equivalent to 1,000,000,000,000 or 10 to the 12th power Btu.

Trim Inclusion: Edge trimming accidentally wound into a roll of foil

trinocular vision : trinocular vision a vision model in which points in a scene are projected onto three different image planes.

Trip: To instantly put a boiler or piece of machinery out of service. To disturb the logic of boiler.

trip coil : trip coil a solenoid in a circuit breaker that initiates breaker opening when energized.

Trip Out: One or more circuit breakers opening up and stopping the flow of power.

Triple Point: The intersection of the boundaries of three adjoining grains, as observed in a section.

Triple Spot Test: See Minimum Triple Spot Average Coating.

triple transit echo (TTE) : triple transit echo (TTE) a multiple transit echo received at three times the main SAW signal delay time. The echo is caused due to the bidirectional nature of SAW transducers and the electrical and/or acoustic mismatch at the respective ports. This is a primary delay signal distortion which can cause filter distortion, especially in bidirectional transducers and filters.

tripen harmonics : triplen harmonics the frequency components which have a frequency of multiple of three times the frequency of the fundamental. These voltages are in phase in all three windings of a three-phase transformer and peak simultaneously. Delta connection on the other side provides a closed path for the flow of triple harmonic currents.

Triplex Cable: A cable composed of either three insulated single-conductor cables twisted together or two insulated single-conductor cables twisted together with a bare conductor or messenger.

triplex cable : triplex cable a cable used for residential or commercial service drops consisting of two or three insulated conductors spiralled around a bare neutral wire which provides support for the cable.

tri-state circuit : tri-state circuit a logic circuit that can assume three output states, corresponding to ZERO, ONE, and OFF. Tri-state circuits are used to place signals on a bus where only one signal source is allowed to be active at a time. Using this type of device, there may be several sources that have the ability to send signals to the same receiver, at different times.

tristimulus value : tristimulus value one value in tristimulus color theory. Tristimulus color theory stems from the hypothesis that the human eye has three types of color receptors (cones) that have peak sensitivity in the red, green and blue visible light wavelengths respectively. The tristimulus color values are a set of three values X, Y, and Z which replace the red, green, and blue intensities with a weighted integral which calculates a spectral energy over the range of visible wavelengths of light for each value; the integrals allow for colors to be represented purely additively, while representing colors via red, green and blue intensities often requires a subtractive interaction between the "primaries."

Trojan Horse: A barrel shaped vessel containing a seal oil reservoir and a vacuum tank. Oil travels from the defoaming tanks into the seal oil reservoir. It then flows into the vacuum tank compartment where gases and vapor are liberated from the oil. The oil is then drawn from the bottom of the vacuum tank through a differential pressure regulator to maintain the oil seals.

Troosite: Tempered martensite that etches rapidly, usually appears dark, and is not resolved by the microscope.

Troosite (Obsolete): A previously unresolvable rapidly etching fine aggregate of carbide and ferrite produced either by tempering martensite at low temperature or by quenching a steel at a rate slower than the critical cooling rate. Preferred terminology for the first product is tempered martensite; for the latter, fine pearlite.

Troposphere: The inner layer of the atmosphere below about 15 kilometers, within which there is normally a steady decrease of temperature with increasing altitude. Nearly all clouds form and weather conditions manifest themselves within this region. Its thermal structure is caused primarily by the heating of the earth's surface by solar radiation, followed by heat transfer through turbulent mixing and convection.

troposphere : troposphere the region of the atmosphere within about 10 km of the Earth's surface. Within this region, the wireless radio channel is modified relative to free space conditions by weather conditions, pollution, dust particles, etc. These inhomogeneities act as point scatterers, which deflect radio waves downward to reach the receiving antennas, thereby providing tropospheric scatter propagation.

trouble ticket : trouble ticket a complaint made by a customer regarding service. Its origins trace back to a paper work request which was given to the service representative.

Trough: High-temperature (180+) concentrator with one axis-tracking.

Trowel Steel: Hardened and tempered spring steel. .90 to 1.05 carbon content. Ordinary tolerances, but rolled extra flat Rockwell C 50. Used in the manufacture of plastering trowels.

Truck Loadcells: A Truck Load Cell is used to measure the weight of a loaded truck. Essentially, it is a scale integrated with a platform that is large enough to accommodate freight trucks.

Truck Weighing Scales: A Truck Weighing Scale is used to measure the weight of a loaded truck. Essentially, it is a scale integrated with a platform that is large enough to accommodate freight trucks.

Truckload: quantities of commodities, including primary and secondary metals, that amount to as much as 44,000 pounds each, which is the standard weight limit on U.S. highways.

true complement : true complement in a system that uses binary (base 2) data negative numbers, the true complement can be represented as 1's complement of the positive number. This is also called a radix complement.

True Concentric: A true concentric stranding or twisted cable is when each successive layer has a reversed direction of lay from the preceding layer.

True date-time group (tdtg) . : (used in codress messages). The original date and time assigned to a message for identification purposes. The tdtg, which is not necessarily the date-time group appearing in the external message heading,

remains identified with a message regardless of the number of transmissions, retransmission's, re-encryptions or re-addressals.

True power: The actual power consumed by a circuit; measured in watts.

True RMS Amps: 1) The effective value of an AC signal. For an amp signal, true RMS is a precise method of stating the amp value regardless of waveform distortion. 2) An AC measurement which is equal in power transfer capability to a corresponding DC current.

True RMS volts: 1) The effective value of an AC voltage value regardless of the waveform distortion. 2) An AC measurement which is equal power transfer capability to a corresponding DC voltage.

true value: Average value of the infinite number of measurements, when the average deviation tends to become zero.

truncation error : truncation error when numerically solv-ing the differential equations associated with electrical circuits, approximation techniques are used. The errors associated with the use of these methods are termed truncation error. Controlling the local and global truncation errors is an important part of a circuit simu-lator's task. Limits on these errors are often given by the user of the program.

trunk : trunk a communication line between two switching nodes.

Trunk group. : A specified combination of trunks between switching facilities.

Trunk line: A main pipeline.

Trunk. : An intelligence carrying multiplexed baseband.

Trunnion Mounted Ball Valve: A Trunnion Mounted Ball Valve is a ball valve where the ball is supported at both the top and bottom by a stems that are allow to rotate in bearings. The additional support makes these valves suitable for high pressure applications and larger valve sizes than a basic ball valve design.

Truss Spring Steel: Supplied cold rolled and bright annealed. Carbon content about .70 Manganese .74. Must be formed very severely and must be as free as possible from decarburization.

Trusted computing base (tcb). : The totality of protection mechanisms within a computer system, including hardware, firmware and software, the combination of which is responsible for enforcing a security policy (nato).

truth model : truth model a very detailed mathemati-cal description of a process to be controlled. The truth model is also called the simulation model, since it is used in simulation studies of the process. See also design model.

truth table : truth table a listing of the relationship of a circuit's output that is produced for various combinations of logic levels at the inputs.

TRXLP: Tree Retardant Cross Linked Polyethylene. A thermoset plastic compound that is used for insulation of wire and cable containing an antitreeing compound.

TS: Two or three-conductor rubber-insulated and jacketed tinsel cord. Light duty, attached to an appliance of 50W or less. For use in damp places in lengths of eight feet or less.

TSO: Same as type TS but with neoprene jacket. 125V

TST: Same as TS, but all-thermoplastic insulation and jacket.

TT: Polyvinyl chloride insulation and sheath, aerial and duct.

TT system: A system having one point of the source of energy directly earthed, the exposed conductive parts of the installation being connected to earth electrodes electrically independent of the earth electrodes of the source.

TT system : , a system having one point of the source of energy directly earthed, the exposed conductive parts of the installation being connected to earth electrodes electrically independent of the earth electrodes of the source,

TT system of earthing: An earthing system where all exposed conductive parts of an installation are connected to an earth electrode provided by the consumer which is electrically independent of the Source earth.

Tube: A term used to describe a passage for fluid in a hydraulic system. Normally specified by outside diameter, wall thickness, material type and material strength.

tube leak : tube leak a crippling mishap in a steam power plant. High-pressure steam leaks from a cracked boiler tube with sufficient energy to cut adjacent tubes.

Tube, Alclad: Composite tube composed of an aluminum alloy core habing on either the inside or outside surface a metallurgically bonded aluminum or aluminum alloy coating that is anodic to the core, thus electrolytically protecting the core against corrosion.

Tubing: When referring to OCTG, tubing is a separate pipe used within the casing to conduct the oil or gas to the surface. Depending on conditions and well life, tubing may have to be replaced during the operational life of a well.

Tubing Electrical Metallic: A tube having certain standardized length and combinations of outside diameter and wall thickness thinner than that of ?Rigid conduit,? commonly designated by nominal electrical trade sizes, for use with compression type fittings as a protection for the electric wiring

Tubular Conductor: A tubular product suitable for use as an electric conductor.

Tubular Plate (Battery): A positive plate which is composed of assembly of porous tubes of perforated metal or tissure with or without a central current collector spine. The active material is placed within the tube.

Tuffriding: A form of surface hardening, the process involves nitrogen but does not achieve the hardness of conventional nitriding. Tukon Hardness Test A method for determining microhardness by using a Knoop diamond indenter or Vickers square base pyramid indenter.

Tukon Hardness Test: A method for determining microhardness by using a Knoop diamond indenter or Vickers square base pyramid indenter.

Tumbling: The process for removing scale from forgings in a rotating container by means of impact with each other and abrasive particles and small bits of metal. A process for removing scale and roughness from forgings by impact with each other, together with abrasive material in a rotating container.

tunable laser : tunable laser laser in which the oscillation frequency can be tuned over a wide range.

Tundish: The reservoir at the top of the continuous caster into which molten steel is poured.

tuned-circuit oscillators : tuned-circuit oscillators See LC-oscillator.

tuner : tuner a circuit or device that may be set to select one signal from a number of signals in a frequency band.

Tungsten: Chemical symbol W. Element No. 74 of the periodic system; atomic weight 183.92. Gray metal of high tensile strength, ductile and malleable when specially handled. It is immune to atmospheric influences and most acids, but not to strong alkalis. The metal is used as filament and in thin sheet form in incandescent bulbs and radio tubes. (1) Forms hard abrasion resistant particles in tool steels. (2) Promotes hardness and strength at elevated temperatures.

Tungsten Carbide: Compound of tungsten and carbon, of composition varying between WC and W(2)C; imbedded in a matrix of soft metal, such as cobalt, extensively used for Sintered Carbide Tools.

Tungsten Carbide Heading Die: A Tungsten Carbide Heading Die is used to form a head on the end of a metal rod. The rod is pushed into the die and the material is allowed to plastically flow inside the die. Tungsten Carbide tooling is hard wearing and long-lived.

Tungsten Halogen Lamp: A gasfilled tungsten halogen lamp containing a certain proportion of halogens.

tuning elements : tuning elements generally lossless elements (probes, screw, etc.) of adjustable penetration extending through the wall of the waveguide or cavity resonator. By changing their position the reflection coefficient is adjusted. See also matching elements.

Tuning. : The process of adjusting a circuit so that it resonates at a desired frequency.

tunnel diode : tunnel diode a PN diode structure that uses band to band tunneling to produce a terminal negative differential resistance, also called an Esaki diode after its inventor L. Esaki.

tunnel effect: The passage of an electron through a narrow potential barrier in a semiconductor, despite the fact that, according to classical theory, the electron does not possess sufficient energy to surmount the barrier.

Tunnel Furnace: Type of furnace whereby stock to be heated is placed upon cars which are then pushed or pulled slowly through the furnace.

Tunneling: Quantum mechanical concept whereby an electron is found on the opposite side of an insulating barrier without having passed through or around the barrier.

tunneling : tunneling a physical phenomenon whereby an electron can move instantly through a thin dielectric.

tunneling modes : tunneling modes in an optical fiber, modes that are intermediate in attenuation between propagating modes and cladding modes and may be sustained between 10's to 100's of meters.

turbidity: turbidity inverse of the length over which the energy of the light transmitted in the forward direction decays to e-1 times its incidence value.

Turbine: A machine for generating rotary mechanical power from the energy of a stream of fluid (such as water, steam, or hot gas). Turbines convert the kinetic energy of fluids to mechanical energy through the principles of impulse and reaction, or a mixture of the two.

turbine: A machine for generating rotary mechanical power from the energy of a stream of fluid (such as air, water, steam, or hot gas). Turbines convert the kinetic energy of fluids to mechanical energy. It generally consists of a series of curved vanes emanating from an axis that is turned by forcing the fluid past the vanes.

turbo code : turbo code the parallel concatenated convolutional coding technique introduced by Berrou, Glavieux, and Thitimajshima in 1993. These codes achieve astonishing performance through parallel encoding of the source symbol sequence and iterative serial decoding of the demodulated symbol sequence.

turbogenerator : turbogenerator a generator driven by a steam-turbine engine.

Turbulent Flow: A condition of flow in a passage that is typified by rapid movement of fluid in a passage, where the fluid is churning and bouncing off the passage walls.

Turning Gear: A motor used to rotate the shaft when the generator is down. The turning gear prevents the shaft from warping.

Turnkey: An installation in which the user receives a complete operational system ready to be used.

Turnkey System Design: Turnkey System Design refers to the practice of designing, engineering and providing standalone process stations to factories, plants, or end users that requires no or minimal interfacing with existing factory equipment. For example, providing a pre-programmed robotic automation system for part loading or a similar operation.

turn-off snubber : turn-off snubber an auxiliary circuit or circuit element (consisting of a resistor and capacitor) used in power electronic systems to reduce the dv=dt during turn off.

turn-on snubber : turn-on snubber an auxiliary circuit or circuit element (usually an inductor) used in power electronic systems to reduce the rate of rise or fall of the turn-on or turn off current to protect the power electronic device.

turns ratio : turns ratio the ratio of the number of turns between two coupled windings, e.g., for a transformer, it is the ratio of number of turns of the primary winding to the number of turns of the secondary windings. For an induction machine, it is the ratio of the number of turns of the stator winding to the number of turns of the rotor winding.

Turntable: The base on which a centrifugal casting mold rests.

TVA: See Tennessee Valley Authority

TVSS: Transient Voltage Surge Suppressor

TVSS Transient voltage Surge Suppressor: A device designed to protect connected devices from transient voltages.

TW: 1) A thermoplastic insulated, moisture resistant conductor designed for use in wet or dry locations and an operating temperature of up to 60 degrees Celsius. 2) Trapezoidal Wire. Built as ACSRTW or ACSSTW, Trapezoidal Wire uses trapezoidal formed strand

TW: Thermoplastic vinyl-jacketed building wire, moisture-resistant. 60°C

Tweak: Tweak is the small modification intended to improve any electronic system by fine tuning and adjusting a complex system.

twelve-pulse converter : twelve-pulse converter the combination of two 6-pulse converters connected through a Y-Y and a delta-Y transformer in order to cancel the characteristic 5th and 7th harmonics of the 6-pulse converters. The lowest characteristic harmonics with twelve-pulse converters under balanced conditions are the 11th and 13th harmonics. The converters are connected in parallel on the AC side and in either series or parallel on the DC side, depending on the required DC output voltage.

Twenty A: See 20A.

Twenty B: See 20B.

Twenty C: See 20C.

twenty-six connected : twenty-six connected See voxel adjacency.

TWh: See Terawatt-hour

Twin: Two portions of a crystal having a definite orientation relationship; one may be regarded as the parent, the other as the twin. The orientation of the twin is either a mirror image of the orientation of the parent across a twinning plane or an orientation that can be derived by rotating the twin portion about a twinning axis.

Twin Annealing: A twin produced as the result of heat treatment.

Twin Cable: A cable consisting of two insulated conductors laid parallel and having a common covering.

Twin Coaxial: A configuration containing two separate, complete coaxial cables laid parallel or twisted around each other in one complex.

Twin Crystal: A portion of a crystal in which the lattice is a mirror image of the lattice of the remainder of the crystal.

Twin Deformation: A twinned region produced by a shear like distortion of the parent crystal structure during deformation. In ferrite, deformation twins form on {211} planes.

Twin Wire: A cable composed of two small insulated conductors laid parallel and having a common covering.

twin-T bridge: twin-T bridge represents a parallel connection of two T-shape two-ports. Each such two-port includes three impedances: two impedances are connected in series between input and output of the two-port, and the third impedance is connected between ground and the common point of two series impedances. The most important in applications is a twin-T bridge where one two-port is a series connection of two resistors and a capacitor is connected between their common point and ground; the other two-port is a series connection of two capacitors and a resistor is connected between their common point and ground. This circuit is used as a passive rejection filter, and as a feedback circuit of some active filters and oscillators.

twin-T bridge oscillator : twin-T bridge oscillator an oscillator where the twin-T bridge is used as a feedback circuit of an amplifier. The twin-T bridge has a very steep phase-frequency response in the vicinity of the bridge rejection frequency, and, with proper design, this may provide high indirect frequency stability. The most problem-free design requires that the bridge transfer function has complex-conjugate zeros slightly shifted from the $j\omega$ -axis into the right half of s -plane. The amplifier should have a negative gain compensating the bridge losses at the oscillation frequency, which is close to the bridge rejection frequency.

Twist: A condition wherein a transverse axis held in the plane of the strip would rotate about the longitudinal axis when moved along the strip.

Twist Lock Connector: A twist lock connector is a specialized type of electrical plug designed to lock the plug into place. The plug is characterized by curved prongs with overhanging fins. The plug is inserted into the socket and rotated to lock the connector in place.

twisted nematic : twisted nematic the alignments of the nematic planes are rotated through 90 degrees across the crystal by constraining alignments to be orthogonal at the boundaries.

twisted nematic liquid crystal: twisted nematic liquid crystal layered electro-optic material that can be switched between an electric-field-aligned state and the natural state with progressive rotation of polarization direction between layers, used in thicknesses to rotate light polarization by 90 degrees between polarizers, to produce light modulation.

Twisted Pair: Telephone companies commonly run twisted pairs of copper wires to each customer household. The pairs consist of two insulated copper wires twisted into a spiral pattern. These wires are capable of transferring both voice as well as data..

Twisted Pair: the bunch or pair of wires which is twisted to make them compact packing. It used in business computers having many connections.

Twisted Pair: A cable composed of two small insulated conductors twisted together, but having no common covering.

Twisted Pair: Two insulated copper wires twisted together to reduce interference from each other.

Twisted Pair Cable: A type of interconnection cable consisting of pairs of wire twisted together.

Twisted pair cable. : Two wires, usually loosely spun around each other to help cancel out any induced noise in balanced

circuits.

Two High Mill: A stand having only two rolls. Some two high mills are reversing with screw downs to adjust the rolls; others are one way only and may or may not have screw downs for roll adjustment and may or may not be a part of continuous mill.

Two Tone: A sharp color demarcation in the appearance of the metal due to a difference in the work roll coating.

Two Way: A term used to describe a valve that has two ports, normally a pressure (inlet) port and an outlet port. Used to open or close a flow passage. May be configured as normally closed (n.c.) or normally open (n.o.).

two-address computer : two-address computer one of a class of computers using two or fewer address instructions.

two-address instruction : two-address instruction a class of assembly language ALU instruction in which the two operands are located in memory by their memory addresses. One of the two addresses is also used to store the result of the ALU operation.

two-and-a-half-D sketch : two-and-a-half-D sketch a representation of the input image which is augmented at every position by information relating to 3-D structure and which is deemed to constitute a significant step on the way to human image interpretation. The name arises as the basic representation is still 2-D, whereas it is tagged with all available 3-D information: it is important in forming a bridge between early (i.e., low level) visual processes and high level vision. It is strongly associated with the name of its developer, the late David Marr.

two-antenna gain measurement method : two-antenna gain measurement method technique based on Friis transmission formula in which the gain of each of two assumed to be identical antennas is calculated from a measurement of the insertion loss between the two antennas and the calculated propagation loss.

Two-axis tracking: A system capable of rotating independently about two axes (e.g., vertical and horizontal).

two-band filter bank : two-band filter bank See two-channel filter bank .

two-beam coupling : two-beam coupling any of several non-linear optical processes involving two optical beams in which energy is transferred from one beam to the other.

two-channel coding : two-channel coding a coding scheme in which a signal is decomposed into two parts: low frequency and high frequency components. The low frequency component is undersampled and the high frequency component is coarsely quantized, thus saving data. It can be viewed as a special example of sub-band coding.

two-channel filter bank : two-channel filter bank a filter bank that has one high frequency band and one low frequency band in both analysis and synthesis filters.

two-degree-of-freedom system: two-degree-of-freedom system a linear robust controller can consist of two independent parts. The feedback part's transfer function $G_f b$ is typically chosen so that disturbances acting on the process are attenuated and the closed-loop system is insensitive to process variations. The feedforward part's transfer function G_{ff} is then chosen to the desired response to command signals. Such a system is called a two-degree-of-freedom system because the controller has two transfer functions that can be chosen independently.

two-dimensional acousto-optic processor : two-dimensional acousto-optic processor an acousto-optic signal processing system typically utilizing the two orthogonal dimensions (e.g., x and y) of Cartesian space to implement space and/or time based integration.

two-dimensional correlator : two-dimensional correlator a correlator where both input signals are two-dimensional, such as images.

two-dimensional Fourier transform : two-dimensional Fourier transform an operation performed optically by a lens on an image placed at the front focal plane of the lens; the complex Fourier transform output is represented by the light at the back focal plane.

two-dimensional joint transform correlator : two-dimensional joint transform correlator a type of optical correlator that employs two parallel paths, one for the input image and one for the reference image, instead of an in-line cascade. See also joint transform correlator.

two-dimensional memory organization : two-dimensional memory organization memory organization in which the arrangement on a single chip reflects the logical arrangement of memory. In the most straightforward case, each address is presented at once in its entirety and decoded by a single decoder. However, to reduce the number of pins required for addressing, the address may be split into two parts that are then sent in sequence on the same lines. Then during the row access strobe, one part is used to select a "row" of the memory, and during the column access strobe the other part is used to select a "column" of the selected "row." The "row" output may be held in a buffer and the "column" access then applied to the contents of the buffer. In a two-and-a-half dimensional organization, the bits of each word are spread across several chips — one bit per chip in the most extreme case. Each chip is then equipped with two decoders, each of which decodes part of a split address in order to carry out a selection on the chip.

two-lamp synchronizing : two-lamp synchronizing the process to connect two three-phase power systems in parallel using the same procedure as for three-lamp synchronizing except that lamps are placed across only two phases of the switch. See also three-lamp synchronizing.

two-pass assembler : two-pass assembler an assembler program that makes two passes through the source code to produce its output. The first pass determines all the referenced addresses and the second pass produces the assembled code. A two-pass assembler can produce directly loadable object code because all the label values are determined in the first pass.

two-phase clock : two-phase clock having two separate clock signals, one high while the other is low, and vice-versa.

two-photon absorption : two-photon absorption a nonlinear optical process in which two photons are removed

simultaneously from a laser beam as an atom makes a transition from its ground to its excited state. The rate at which such events occur is proportional to the square of the intensity of the laser beam.

two-port : two-port a network with four accessible terminals grouped in pairs, for example, in-pair, output pair.

two-port memory : two-port memory a memory system that has two access paths; one path is usually used by the CPU and the other by I/O devices. This is also called dual port memory.

two-port network: An electrical network with two separate ports for input and output.

two-quadrant : two-quadrant a drive that can operate as a motor as well as a generator in one direction.

two-quadrant operation : two-quadrant operation operation of a motor with a controller that can provide power to run the motor and absorb power from the motor during deceleration (regenerative braking). Two quadrant operation provides improved efficiency if the motor is started and stopped frequently.

two-scale relation : two-scale relation in general, a linear combination of the scaling functions of a wavelet. It shows clearly how the function behaves at different resolutions. A general two-scale relation could be expressed as where is the scaling function and the h are the coefficients that define the wavelet.

two-terminal : two-terminal a network with two accessible terminals.

two-wave mixing : two-wave mixing a nonlinear optical process in which two beams of coherent light interact inside nonlinear media or photorefractive crystals. When two beams of coherent electromagnetic radiation intersect inside a nonlinear medium of a photorefractive crystal, the periodic variation of the intensity due to interference will induce a volume refractive index grating. The presence of such a refractive index grating will then affect the propagation of these two beams. This may lead to energy coupling. The coupling of the two beams in nonlinear media is referred to as two-wave mixing.

Two-way: Communication is a form of transmission in which both of the parties are involved.

two-way channel : two-way channel two terminal channel in which both terminals simultaneously transmit and receive using the same channel, thus disturbing each other's transmissions.

two-way interleaved : two-way interleaved in memory technology, a technique that provides faster access to memory values by interleaving memory values in two separate modules.

two-way switch: A two-way switch is one which enables operation of a lamp from two positions, such as at the top and bottom of a staircase and at the ends of a long corridor.

TWT: Travelling wave tube; It is used to amplify radio frequency signal in the microwave range.

TWTA : TWTA traveling-wave tube amplifier. See traveling wave amplifier .

twta - travelling wave tube amplifier. : An electron tube in which a stream of electrons interacts continuously or repeatedly with a guided electromagnetic wave moving substantially in synchronism with it, and in such a way that there is a net transfer of energy from the stream to the wave.

Twx, teletypewriter exchange service. : A network of teleprinters connected over a north american public switched network; uses ascii code.

Tymnet. : A common carrier offering an x25 pdn.

Type a coax. : (in ibm 3270 systems) a serial transmission protocol operating at (2).35mbps which provides for the transfer of data between a 3274 control unit and attached display stations or printers.

Type D: Base metal steel, aluminum killed; sometimes required to minimize severe fluting and stretcher strain hazards for severe drawing applications.

Type of drive (vehicle): Refers to which wheels the engine power is delivered to, the so-called "drive wheels." Rear-wheel drive has drive wheels on the rear of the vehicle. Front-wheel drive, a newer technology, has drive wheels on the front of the vehicle. Four-wheel drive uses all four wheels as drive wheels and is found mostly on Jeep-like vehicles and trucks, though it is becoming increasingly more common on station wagons and vans.

type tests : These tests are done to ensure that the particular design is suitable for a specific purpose. They are normally done either at design stage, or when a purchaser (of large orders) requires them to be done.

type-N connector : type-N connector named after P. Neill of Bell labs, this coaxial connector has both a male and female version. The outer diameter of the female connector is approximately 5/8 inch with an upper frequency range of about 18 GHz.

typical sequence : typical sequence for a given probability mass function $p(x)$, a particular sequence of length n chosen i.i.d. according to $p(x)$ is typical if its empirical distribution is deemed close to the true distribution. This notion is also generalized to include the comparison of functions of the true and empirical distributions. For example, entropy-typical sequences are used in proving coding theorems in information theory.

U Channel Extrusion: An extrusion is a component fabricated with a manufacturing process in which a material such as plastic or a soft metal is pulled through a die. The extrusion process results in long pieces of material with a constant cross-sectional shape. A U-channel extrusion has a cross-section shape consistent with a U, either with a round or square bottom.

U.S. refiner acquisition cost of imported crude oil: The average price paid by U.S. refiners for imported, that is, non-U.S., crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. The refiner acquisition cost of imported crude oil includes transportation and other fees paid by the refiner.

U.S.S. Gauge: A gauge system used for carbon steels but not appropriate for stainless steels where thickness is specified in decimals. However, salesperson should always question customer when unsure as to whether U.S.S. or decimal is being specified. For example, 16 gauge for U.S.S. is .058? not .016?. U.S.S. does not stand for Ulbrich Stainless Steel.

U.S.S.R.: See Union of Soviet Socialist Republics (U.S.S.R.) .

U3O8: See Uranium oxide.

Ua, user agent. : Within mhs, the system responsible for originating and receiving messages.

UART : UART See universal asynchronous receiver/ transmitter.

ubitron : ubitron a millimeter wave high-power quasicquantum generator with relativistically high-speed electron beam. Millimeter waves are generated due to quantum transition between two energy states of electrons and amplified due to the velocity modulation and kinetic energy transfer principles.

UCA: Utility Communications Architecture.

UD: Underground Distribution

UD: Underground distribution.

UF: A thermoplastic insulated, underground feeder conductor or cable designed for use in wet locations, including direct burial.

UF: Thermoplastic underground feeder and branch circuit cable.

UF6: See Uranium hexafluoride.

Ufer ground : Ufer ground a term, named for engineer Herb Ufer, used to describe concrete-encased earth electrodes (e.g., rebars in a building's foundation footers).

UHF power : UHF power in television, the band of frequencies ranging from 300MHz to 3 GHz.

UHV: See "Ultra High Voltage".

Uinta Basin: Consists of the Colorado counties of Delta, Garfield, Gunnison, Mesa, Moffat, Pitkin, Rio Blanco, Routt and the Utah counties of Carbon, Duchesne, Emery, Grand, Sanpete, Sevier, Uintah, Utah, and Wasatch.

UL: Underwriters Laboratories, Inc. UL is located at 333 Pfingsten Road, Northbrook, IL 60062.

UL: Underwriters Laboratory. Standards and test that wire must meet in order to receive UL approval.

UL classes : UL classes a classification system established by Underwriters Laboratory (UL) for the purpose of defining certain operating characteristics of low voltage fuses. UL classes include G, J, L, CC, T, K, R, and H.

UL/CSA Class Fuses: General purpose fuses meeting one of the industry standards called "classes." Fuse classifications H, J, K, L, R, CC, G and T. Qualifying fuses are typically tested and certified by UL or CSA to tri-national Fuse Standard 248.

ULCC: Ultra Large Crude Carrier.

Ulsi, ultra large-scale integration. : A term used to describe a multi-function semiconductor device with an ultra-high density (over 10,000 circuits) or electronic circuitry contained on a single silicon chip. (see table following lsi for comparison of circuit density ranges).

Ultimate Analysis: In chemistry, this is a quantitative analysis in which percentages of all elements in the substance are determined.

Ultimate analysis: determines the amount of carbon, hydrogen, oxygen, nitrogen, and sulfur. Heating value is determined in terms of Btu, both on an as received basis (including moisture) and on a dry basis.

ultimate boundedness : ultimate boundedness the property of the solutions of a system equation, guaranteeing that for "small" perturbations in the equation, the solution will eventually be "small" in time.

Ultimate customer: A customer that purchases electricity for its own use and not for resale.

Ultimate Tensile Strength: The highest load applied in breaking a tensile test piece divided by the original cross sectional area of the test piece.

Ultra capacitor: It is an electrical component capable of holding hundred of times more electrical charge quantity than a standard capacitor.

ultra high frequency UHF: Radio frequencies in the range 300 MHz to 3000 MHz.

ultra high frequency UHF : Radio frequencies in the range 300 MHz to 3000 MHz.

Ultra High Voltage (UFV): Transmission systems in the ac voltage exceeds 800,000 volts.

Ultra High Voltage (UFV): The polyphase load in which the impedances in one or more phase differ from the impedances of other phases.

Ultrahigh frequency: It is the ITU designation for radio frequencies having range of 300Mhz to 3Ghz.

ultra-high frequency (UHF) : ultra-high frequency (UHF) electro-magnetic spectrum with frequencies between 300 MHz and 3000 MHz or wavelengths between 10 cm and 100 cm. Also called as decimetric waves.

ultrahigh voltage transmission, UHV transmission : Transporting electricity over bulk-power lines at voltage greater than 800 kilovolt.

ultra-large-scale integration (ULSI) : ultra-large-scale integration (ULSI) an integrated circuit made of millions of transistors.

Ultra-low sulfur diesel (ULSD) fuel: Diesel fuel containing a maximum 15 parts per million (ppm) sulfur.

Ultrasonic Inspection: A means of locating defects in steel. When acoustic energy in the ultrasonic range is passed through steel, the sound waves tend to travel in straight lines, rather than diffusing in all directions as they do in the audible range. If there is a defect in the path of the beam it will cause a reflection of some of the energy, depleting the energy transmitted. This casts an acoustic shadow which can be monitored by a detector placed opposite the transducer or energy source. If the acoustic energy is introduced as a very short burst, then the reflected energy coming back to the originating transducer can also be used to show the size and depth of the defect. Ultrasonic techniques can be used to detect deeply located defects or those contained

in the surface layer. Skill and experience are required in interpreting the results portrayed on the cathode ray tube.

ultrasonic memory : ultrasonic memory obsolete form of memory, in which data was stored as ultra-sonic sound recirculating through a column of mercury. Also called mercury delay-line memory.

Ultrasound: It is an oscillating sound pressure wave with a frequency greater than the upper limit of the human being range.

ultrasound : ultrasound an imaging modality that uses reflected high-frequency sound energy to image the interface between materials with different acoustic impedances.

Ultraviolet: Electromagnetic radiation in the wavelength range of 4 to 400 nanometers.

Ultraviolet: Electromagnetic radiation in the wavelength range of 4 to 400 nanometers.

ultraviolet : ultraviolet a term referring to wave-lengths shorter than 400 nm, but longer than 30 nm. The region 400–300 nm is the near ultraviolet, 300–200 is the middle ultraviolet; and 200–30 nm is the far ultraviolet or vacuum.

Ultra-Violet Degradation: The degradation caused by long time exposure of a material to sunlight or other ultraviolet rays containing radiation.

ultraviolet laser : ultraviolet laser producing its output in the ultraviolet region of the spectrum.

ultra-violet radiation or UV radiation: Electromagnetic radiation in the wavelength range of approximately 400 nm to 500 nm. These fall between the visible light and the X-rays.

ultra-violet radiation, UV radiation : Electromagnetic radiation in the wavelength range of approximately 400 nm to 500 nm. These fall between the visible light and the X-rays.

umbrella cell : umbrella cell a cell that covers the same geographical area as a number of micro- or picocells, and is aimed at supplying seamless service to subscribers with high mobility in these areas.

UMPC: Ultra mobile personal computer; was a small form factor, version of a pen computer.

UMTRA: See Uranium Mill Tailings Radiation Control Act of 1978.

Unaccounted for (crude oil): Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unaccounted for (natural gas): Represents differences between the sum of the components of natural gas supply and the sum of components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperatures and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar-period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

unary operation : unary operation an operation a computer performs that involves only one data element. The complement and increment operations are examples of such an operation while ADD is an example of an operation that requires two data elements.

unbalanced line : unbalanced line refers to a signal carrying line where one of the conductors is connected to ground. Contrast with balanced line.

Unbalanced Loads: Refers to an unequal loading of the phases in a three-phase system.

Unbalanced Loads: Unbalanced Loads is unequal on the two sides of a three-wire dc system.

unbalanced magnetic pull : unbalanced magnetic pull a phenomenon in electric machines arising from the rotor not being symmetrical with respect to the stator or the axis of the rotor and stator not being coincident. Results in a higher pulling force on the side with the smaller airgap, resulting in additional bearing stresses.

unbalanced operation : unbalanced operation in an n-phase system ($n > 1$), a condition in which the phase voltages (currents) are either 1. not equal-amplitude sinusoids or 2. have phase angles displaced by a value other than that specified for balanced operation. The term "unbalanced" is also used to describe a machine that has unsymmetrical phase windings. See also balanced operation.

unbalanced three phase system: A three phase system in which either the supply or the load or both are not fully balanced.

unbalanced three phase system : A three phase system in which either the supply or the load or both are not fully balanced.

Unbundling: Separating vertically integrated monopoly functions into their component parts for the purpose of separate service offerings.

unbundling : unbundling a feature of utility de-regulation in which services which were formerly bundled together are sold separately to the customer.

unbundling : Disaggregating electric utility service into its basic components and offering each component separately for sale with separate rates for each component.

uncertain dynamical system model : uncertain dynamical system model a mathematical model of a dynamical system that includes the system's uncertainties or disturbances. A possible tool to model an uncertain system is to use a differential inclusion,

uncertainties : Uncertainties are factors over which the utility has little or no foreknowledge, and include load growth, fuel prices, or regulatory changes. Uncertainties are modeled in a probabilistic manner. However, in the Detailed Workbook, you may find it is more convenient to treat uncertainties as "unknown but bounded" variables without assuming a probabilistic structure. A specified uncertainty is a specific value taken on by an uncertainty factor (e.g. 3 percent per year for load growth).

A future uncertainty is a combination of specified uncertainties (e.g. 3 percent per year load growth, 1 percent per year real coal and oil price escalation, and 2.5 percent increase in housing starts).

Uncompleted wells, equipment, and facilities costs: The costs incurred to (1) drill and equip wells that are not yet completed, and (2) acquire or construct equipment and facilities that are not yet completed and installed.

unconditional branch : unconditional branch an instruction that causes a transfer of control to another address without regard to the state of any condition flags.

Unconsolidated entity: A firm directly or indirectly controlled by a parent but not consolidated with the parent for purposes of financial statements prepared in accordance with generally accepted accounting principles. An unconsolidated entity includes any firm consolidated with the unconsolidated entity for purposes of financial statements prepared in accordance with generally accepted accounting principles historically and consistently applied. An individual shall be deemed to control a firm that is directly or indirectly controlled by him or by his father, mother, spouse, children, or grandchildren.

Unconsolidated Entity Unconsolidated Entity : - A firm that is affiliated with a parent entity but not consolidated with the parent entity for purposes of financial statements prepared in accordance with Generally Accepted Accounting Principles (GAAP). An individual shall be deemed to control a firm that is directly or indirectly controlled by him/her or by his/her father, mother, spouse, children, or grandchildren.

uncontrolled rectifier : uncontrolled rectifier a rectifier circuit employing switches that do not require control signals to operate them in their "on" or "off" states.

Unconventional oil and natural gas production: An umbrella term for oil and natural gas that is produced by means that do not meet the criteria for conventional production. See Conventional oil and natural gas production. Note What has qualified as "unconventional" at any particular time is a complex interactive function of resource characteristics, the available exploration and production technologies, the current economic environment, and the scale, frequency, and duration of production from the resource. Perceptions of these factors inevitably change over time and they often differ among users of the term. For these reasons, the scope of this term will be expressly stated in any EIA publication that uses it. For example, see International Energy Outlook, Table E4 for the list it currently uses for unconventional oil and natural gas production.

Uncover Temperature: The temperature of the coil after processing at the batch anneal approx. 180 degree

underexcited : underexcited a condition of operating a synchronous machine, in which the current to the DC field winding is insufficient to establish the required magnetic flux in the air-gap. As a result, the machine requires reactive power from the AC system. An underexcited synchronous motor operates at a lagging power factor, as it appears as an inductive load to the AC system. An under-excited synchronous generator operates with a leading power factor, since it must deliver power to a leading (capacitive) system.

underflow : underflow a condition in a floating-point system where the result of an operation is nonzero yet too small in absolute value to be properly represented in the system.

underfrequency relay : underfrequency relay a protection device that curtails loads in an area that is deficient in generation. Lower generation compared to load demands give rise to lower frequency and a frequency threshold can be used by the relay to initiate load shedding in order to balance generation and demand.

underground distribution : underground distribution a class of electric power distribution work, typically used in densely-populated urban business districts, in which conductors are carried in conduits under streets between manholes and submersible distribution transformers are mounted in underground vaults.

Underground Distribution Substation: These are also located near to the end-users. Distribution substation transformers change the subtransmission voltage to lower levels for use by end-users.

Underground mine: A mine where coal is produced by tunneling into the earth to the coalbed, which is then mined with underground mining equipment such as cutting machines and continuous, longwall, and shortwall mining machines.

Underground mines are classified according to the type of opening used to reach the coal, i.e., drift (level tunnel), slope (inclined tunnel), or shaft (vertical tunnel).

Underground natural gas storage: The use of sub-surface facilities for storing natural gas for use at a later time. The facilities are usually hollowed-out salt domes, geological reservoirs (depleted oil or gas fields) or water-bearing sands (called aquifers) topped by an impermeable cap rock.

Underground natural gas storage injections: Natural gas put (injected) into underground storage reservoirs.

Underground Residential Distribution: (URD) Refers to the system of electric utility equipment that is installed below grade.

underground residential distribution : underground residential distribution practices involved in the underground distribution of electric power to residential subdivisions through direct-buried cables and pad mound transformers.

Underground storage: The storage of natural gas in underground reservoirs at a different location from which it was produced.

Underground storage withdrawals: Natural gas removed from underground storage reservoirs.

Underground Transmission Lines: These lines are becoming more common, especially in highly populated area. They may be buried with no protection, or placed in conduit, trenches, or tunnels.

Underground Utility Structure: An enclosure for use underground that may be either a handhole or manhole.

Underlap: The condition of a spool and body in a servo valve or other spool valve wherein the spool is displaced a specified amount (the underlap) to expose two adjacent cavities to each other.

underlay : underlay in a wireless communication system this refers to a system where a trans-mitter which covers a small area (small cell) transmits a signal that occupies the same spectrum as the main system. Such an under-lay cell may block out coverage of the main system service in the small cell.

under-voltage: Like a sag, but for a longer period of time over 2.5 second.

under-voltage: Like a sag, but for a longer period of time over 2.5 seconds.

undervoltage : undervoltage a voltage that is less than nominal for a time greater than 1 minute.

Undervoltage relay: A relay that operates when the voltage applied to the relay is equal to or less than its setting.

undervoltage relay : undervoltage relay a protective relay that operates on low voltage or loss of voltage.

Underwater Welding: Underwater Welding is the process in which divers use shielded metal arc welding (SMAW or stick welding) to join metal, almost exclusively low carbon steels, underwater.

Underwind: Steel strip that comes off of the bottom of the coil on the entry reel into the side trimmer.

Underwrap: The direction which coils are being wrapped or unwrapped. If coil is underwrapping the reel is turning and the steel is fed from the bottom.

Underwriters Laboratory : Underwriters Laboratory an insurance industry testing agency that establishes standards for and conducts testing of electrical equipment.

undetected error probability : undetected error probability in a linear block code, the probability that a receiver will not be able to detect the presence of transmission errors in received codewords. The transmission of codewords from a linear block code, C , via a communication channel can be expressed as follows: $x D y C e$ with y codewords from the code C and x words received via the channel. e denotes error words generated by the channel during transmission of the codewords. The receiver will only detect the presence of errors if $x \neq 2C$, i.e., if the received words are not codewords from the code C . Undetected errors occur only if $e \in 2C$, in which case the linearity property of the codes causes $x \neq 2C$ although $x \in 6Dy$. The undetected error probability is, therefore, strongly related to the nature of errors in the communication channel as well as the particular block code used. See also block code.

Undifferentiated/unspecified reserves and production: Reserves and production that are not separable by FERC production areas or by states. Undifferentiated and unspecified reserves consist only of company-owned gas in underground storage.

Undiscovered recoverable reserves (crude oil and natural gas): Those economic resources of crude oil and natural gas, yet undiscovered, that are estimated to exist in favorable geologic settings.

Undiscovered resources (coal): Unspecified bodies of coal surmised to exist on the basis of broad geologic knowledge and theory. Undiscovered resources include beds of bituminous coal and anthracite 14 inches or more thick and beds of sub bituminous coal and lignite 30 inches or more thick that are presumed to occur in unmapped and unexplored areas to depths of 6,000 feet. The speculative and hypothetical resource categories comprise undiscovered resources.

unequal error protection (UEP) code : unequal error protection (UEP) code a code in which certain digits of a codeword are protected against a greater number of errors than other digits in the codeword.

Unfilled requirements: Requirements not covered by usage of inventory or supply contracts in existence as of January 1 of the survey year.

Unfinished oils: All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of crude oil and include naphthas and lighter oils, kerosene and light gas oils, heavy gas oils, and residuum.

unfolding : unfolding the technique of transforming a program that describes one iteration of an algorithm to another equivalent program that describes iterations of the same algorithm.

unforced system : unforced system a dynamic system where all of the external sources of excitation are identically zero.

Unfractionated streams: Mixtures of unsegregated natural gas liquid components, excluding those in plant condensate. This product is extracted from natural gas.

Unglazed solar collector: A solar thermal collector that has an absorber that does not have a glazed covering. Solar swimming pool heater systems usually use unglazed collectors because they circulate relatively large volumes of water through the collector and capture nearly 80 percent of the solar energy available.

ungrounded system : ungrounded system an electrical distribution system in which there is no intentional connection between a current-carrying conductor and ground.

uniaxial medium : uniaxial medium a medium whose permittivity and/or permeability is characterized by a 3 3 diagonal matrix where two of the three elements are the same.

Unibus : Unibus bus standard used by Digital Equipment Corporation for its PDP and VAX computers.

unidirectional bus : unidirectional bus a group of signals that carries information in one direction. Example: The address bus of the microprocessor is unidirectional; it carries address information in one direction — from the microprocessor to memory or peripheral.

Unidirectional Concentric Stranding: A unidirectional stranding where each successive layer has a different lay length thereby retaining a circular form without migration strands from one layer to another.

unidirectional laser : unidirectional laser ring laser in which either the clockwise or counter-clockwise circulating wave is negligible.

unidirectional resonator : unidirectional resonator ring resonator in which the electromagnetic waves circulate in either the

clockwise or counter-clockwise direction but not both.

Unidirectional Stranding: A term denoting, that in a stranded conductor all layers have the same directional lay.

unidirectional transducer (UDT) : unidirectional transducer (UDT) a transducer capable of launching energy from primarily one acoustic port over a desired bandwidth of interest.

Unidirectional Unit: Allows inputs to be measured in one direction only. The stated output range indicates the minimum and maximum input levels.

unified cache : unified cache a cache that can hold both instructions and data. See also cache.

unified power flow controller : unified power flow controller a device for both series and shunt reactive compensation, brought about by thyristor-based control.

unified transaction : unified transaction a transaction, which can be a hardware instruction or a program segment, that performs a read-modify-write operation, that is allowed to complete without interruption by other processes.

uniform array : uniform array an array where the antenna elements that make up the array are uniformly spaced. Typical examples of this are the linear array and circular array.

uniform chromaticity scale : uniform chromaticity scale a chart, which allows for the quick calculation of the X, Y, and Z tristimulus values of the CIE colorimetry system.

uniform circular array (UCA) : uniform circular array (UCA) in array processing, an array with evenly spaced sensors placed on the perimeter of a circle.

uniform length coding : uniform length coding a coding scheme that assigns the same number of bits to different messages no matter what probabilities the messages assume.

uniform linear array (ULA) : uniform linear array (ULA) in array processing, an array with evenly spaced sensors placed on a straight line.

uniform memory access : uniform memory access refers to a class of shared memory multiprocessor systems in which accesses to all parts of the shared memory take the same time independently of which processor makes the access.

uniform plane wave : uniform plane wave a special class of electromagnetic problems where the E and H field are locally contained in a plane, and in each local plane, the E and H fields have a constant value over all that plane.

uniform sampling : uniform sampling the sampling of a continuous signal at a constant sampling frequency.

uniform scalar quantization : uniform scalar quantization a structured scalar quantizer where the distance between reproduction levels is a given fixed number. Also known as uniform SQ.

uniform SQ : uniform SQ See uniform scalar quantization.

Uniform system of accounts: Prescribed financial rules and regulations established by the Federal Energy Regulatory Commission for utilities subject to its jurisdiction under the authority granted by the Federal Power Act.

uniformly asymptotically stable state : uniformly asymptotically stable state the equilibrium state of a dynamic system described by a first-order vector differential equation is said to be uniformly asymptotically stable if it is both uniformly convergent and uniformly stable. See also uniformly stable state and uniformly convergent state.

uniformly excited equally spaced linear array (UEESLA) : uniformly excited equally spaced linear array (UEESLA) an antenna array in which all the centers of the antennas are collinear and equally spaced and each antenna has a constant harmonic value but each antenna can have a unique phasing.

uniformly stable equilibrium : uniformly stable equilibrium an equilibrium point of a nonautonomous system where the solutions that start "sufficiently close," stay "close" in time irrespective of the choice of initial time.

unijunction transistor UJT: This low power transistor is useful in electronic timing, waveshaping and control applications.

unilateral gain 12: unilateral gain special case of the transducer power gain of a 2-port network. The transducer power gain is the ratio of the power delivered to the load to the power available from the source. The unilateral gain is the nonreciprocal case of transducer power gain (S12 D 0).

Unilay Stranding: A bunched construction having 19, 27, 37, or any number of strands which might be found in a concentric stranding.

Uninet. : A common carrier offering an x25 pdn.

uninterrupted power supply (UPS) : uninterrupted power supply (UPS) (1) a power supply designed to charge an energy storage medium, while providing conditioned output power, during the presence of input power and to continue providing output power for a limited time when the input to the supply is removed. These power supplies are typically used in critical applications to prevent shut-down of these systems during power failures, power surges, or brownouts.(2) a device that provides protection for critical loads against power outages, over-voltages, undervoltages, transients, and harmonic disturbances. A typical UPS is a rectifier-supplied battery bank for energy storage, and a PWM inverter-filter system to convert a DC voltage to a sinusoidal AC output. UPS systems can be on-line, as shown in the figure, where the UPS inverter powers the load continuously, or off-line where the load is connected directly to the utility under normal operation and emergency power is provided by the UPS.

Uninterruptible Power Supply: The power backup or storage which help the computers or machines in running condition in case of power lost.

uninterruptible power supply UPS : A system designed to automatically provide power, without delay or transients, when the normal power supply is incapable of supplying acceptable power. Some UPSs also filter and/or regulate utility power.

uninterruptible power supply UPS : A system designed to automatically provide power, without delay or transients, when

the normal power supply is incapable of supplying acceptable power. Some UPSs also filter and/or regulate utility power.

Union of Soviet Socialist Republics (U.S.S.R.): A political entity that consisted of 15 constituent republics Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The U.S.S.R. ceased to exist as of December 31, 1991

Unipolar: A signal range that is always positive (for example, 1 to 5 V).

Unipolar or Acyclic Machine: A direct current machine in which the voltage generated in the active conductors maintains the same direction with respect to those conductors.

uniquely decodeable : uniquely decodeable a channel code where the correct message sequence can always be recovered uniquely from the coded sequence as observed through the channel. Of particular interest for multiple access channels. See also multiple access channel, zero-error capacity.

uniqueness theorem of electromagnetics : uniqueness theorem of electromagnetics a theorem stating that the solutions to Maxwell's equations are unique, given certain boundary conditions (for the differential form of the equations) or certain initial conditions (for the integral form of the equations). As an example, if the electric field and magnetic field satisfy Maxwell's equations in some volume V of lossy material and if the tangential fields satisfy a prescribed set of boundary conditions on the surface S that defines V , then the solution for the electric and magnetic fields is the only one (i.e., the unique one). Note: The uniqueness theorem only requires one of the following three con-

Unit: It is a definite magnitude of a physical quantity.

Unit Electrical Relay: A single relay that can be used alone or in combinations with others.

unit impulse: A function with unit integral area, which is zero everywhere except at zero time where it is infinite.

Unit price: Total revenue derived from the sale of product during the reference month divided by the total volume sold; also known as the weighted average price. Total revenue should exclude all taxes but include transportation costs that were paid as part of the purchase price.

Unit Protection: A protection system that is designed to operate only for abnormal conditions within a clearly defined zone of the power system.

unit ramp: A function which is zero for negative time, and unit slope for positive time.

unit step: A function with zero magnitude for negative time and unit magnitude for positive time.

unit step function : unit step function a mathematical function whose amplitude is zero for all values of time prior to a certain instant and unity for all values of time afterwards. The unit step signal is the integral of the unit impulse function. That is, the function $u(t)$ which is 1 for all $t \geq 0$ and 0 for all $t < 0$.

Unit value, consumption: Total price per specified unit, including all taxes, at the point of consumption.

Unit value, wellhead: The wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas; gathering and compression charges; and state production, severance, and/or similar charges.

unitarity in scattering : unitarity in scattering law expressing the conservation of energy from the incident light to that scattered and absorbed by an inhomogeneous medium.

unitary transform : unitary transform a transform whose inverse is equal to the complex conjugate of its transpose.

United States: The 50 States and the District of Columbia. Note The United States has varying degrees of jurisdiction over a number of territories and other political entities outside the 50 States and the District of Columbia, including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Johnston Atoll, Midway Islands, Wake Island, and the Northern Mariana Islands. EIA data programs may include data from some or all of these areas in U.S. totals. For these programs, data products will contain notes explaining the extent of geographic coverage included under the term "United States."

universal asynchronous receiver/transmitter (UART) : universal asynchronous receiver/transmitter (UART) a standard interface often used in small computer systems, to buffer and translate between the parallel word format used by the CPU and the asynchronous serial format used by slow I/O devices.

Universal Bushing Well: This 200 amp rated component is used as part of a system to terminate medium voltage cables to transformers, switchgear and other electrical equipment. Universal Bushing Wells are manufactured by the Elastimold Division of Thomas & Betts.

universal coding : universal coding coding procedure that does not require knowledge of the source statistics and yet is asymptotically optimal. A typical example is Ziv-Lempel coding.

Universal Coupling: A Universal Joint Shaft Coupling is a mechanical joint use the transfer rotation between two non-concentric shafts. In practice, universal joints are used whenever to shaft need to be joined together.

universal function approximation property : universal function approximation property uniform approximation of any real continuous nonlinear function to arbitrary level of accuracy in a compact set. It has been demonstrated that some relevant model of soft-computing (such as multilayer perceptrons, radial basis functions networks, and fuzzy systems) hold this property. See also fuzzy system, multilayer perceptron, radial basis function network.

universal fuzzy approximator : universal fuzzy approximator a fuzzy system approximator in a sense that it can approximate any nonlinear function to any degree of accuracy on any compact set.

universal fuzzy controller : universal fuzzy controller a fuzzy controller in a sense that it can control any nonlinear plant as long as the plant can be controlled by a smooth nonlinear control law.

Universal Mill: A rolling mill in which rolls with a vertical axis roll the edges of the metal stock between some of the passes through the horizontal rolls.

universal resource locator url: This is the method of addressing on the web. They include the file transfer protocol (ftp) and the hyper text transfer protocol (http).

universal source coding : universal source coding refers to methods for source coding that do not rely on explicit knowledge of the source statistics. One important method for universal lossless source coding is Ziv–Lempel coding.

universal synchronous/asynchronous receiver/transmitter (USART) : universal synchronous/asynchronous receiver/transmitter (USART) a logic device that performs the data link layer functions, such as serializing, deserializing, parity generation and checking, error checking, and bit stuffing, of a serial transmission protocol for either synchronous or asynchronous transfer modes.

Universal Temperature Controllers: A Universal Temperature Controller is a programmable device that can monitor temperature and provide output signals for enabling heaters, chillers, or other devices.

universe of discourse : universe of discourse term associated with a particular variable or groups of variables, it is the total problem space encompassing the smallest to the largest allowable nonfuzzy value that each variable can take.

Unkilled Steel: A wild steel insufficiently deoxidized so that it evolves gas and blowholes during solidification.

Unload: To release flow (usually directly to the reservoir), to prevent pressure being imposed on the system or portion of the system.

unloaded Q : unloaded Q dimensionless ratio of the average over any period of time ($T D 1/\text{frequency}$) of the ratio of the maximum energy stored (U_{\max}) to the power absorbed or dissipated in a passive component or circuit, discounting any external effects. An ideal resistor has an unloaded Q of zero, and ideal capacitors or inductors have an unloaded Q of infinity. For most applications, the higher the unloaded Q the better the part.

unmodeled dynamics : unmodeled dynamics in control systems design, it is often assumed that the true process is compatible with the model used in parameter estimation. However, it frequently happens that the true process is more complex than the estimated model. This is often referred to as unmodeled dynamics. The problem is complex, and a careful analysis is lengthy. If a controller is able to control processes with unmodeled dynamics and/or disturbances, we say that the controller is robust.

unpolarized : unpolarized if the amplitude of the wave in plane perpendicular to the direction of propagation appears to be oriented in all directions with equal probability, the wave is said to be unpolarized. Unpolarized electro-magnetic waves are generated by atomic processes.

unprivileged mode : unprivileged mode one of two CPU modes, the other being privileged mode. Sometimes called user mode, this mode prohibits access to certain instructions, data, and registers.

Unprocessed gas: Natural gas that has not gone through a processing plant.

Unregulated Entity: For the purpose of EIA's data collection efforts, entities that do not have a designated franchised service area and that do not file forms listed in the Code of Federal Regulations, Title 18, Part 141, are considered unregulated entities. This includes qualifying cogenerators, qualifying small power producers, and other generators that are not subject to rate regulation, such as independent power producers.

Unrestricted Protection: A protection system which has no clearly defined zone of operation and which achieves selective operation only by time grading.

Uns: Defines the chemical analysis (Unified Numbering System) as a joint responsibility of the SAE and ASTM.

Unscheduled outage service: Power received by a system from another system to replace power from a generating unit forced out of service.

unserved energy : The average energy that will be demanded but not served during a specified period due to inadequate available generating capacity.

unsharp masking : unsharp masking an edge enhancement technique that subtracts a blurred version of an image from the input image. See also edge enhancement.

Unshielded Twisted Pair (UTP): Cable construction consisting of pairs of wires twisted at regular intervals (called the pitch) in order to reduce electrical noise interferences.

unsigned integer : unsigned integer an integer numeric representation in which only positive numbers are represented. For example, a 16-bit unsigned integer has a range of 0 to 65535.

unstable : unstable (1) a circuit or circuit element that is likely to change state spontaneously within a short period of time.(2) a system that is not stable.

unstable resonator : unstable resonator resonator in which an axial light ray is unstable with respect to perturbations, and ray trajectories become unbounded; does not imply unstable modes (unstable resonators have stable modes); high-loss resonator.

unstable state : unstable state the equilibrium state of a dynamic system described by a first-order vector differential equation is said to be unstable if it is not stable. See also stable state.

unstructured uncertainty : unstructured uncertainty high-order variations or unknown disturbances characterized usually by a set of norm-bounded perturbations introduced into a fixed nominal plant. For linear systems with a model in frequency domain, an uncertain system is represented by a class of plants composed of a nominal known rational matrix and unknown but stable one whose norm is bounded by an absolute value of known rational function.

unsupervised learning : unsupervised learning (1) learning from unlabeled data. The learning system seeks to identify structure in the data by clustering similar input patterns. (2) a training technique in statistical pattern recognition or artificial neural networks in which the training set does not include a predefined desired output.

unsupervised neural network : unsupervised neural network neural network that does require predetermined out-put to form the interconnection weight ma-trix of a network. If no input–output pairs are known and a number of inputs are available, we can only memorize them in an organized order. Similar inputs are memorized in loca-tions close to each other and different inputs are stored in locations far from each other. The network is able to recognize an input that has already appeared before. If the input has never appeared, it will be stored in an ap-propriate location, which is close to similar inputs and far from different inputs. An ex-ample of unsupervised neural network is the Kohonen self-organizing map, which can be implemented using an adaptive correlator. A correlator has been long used in optical pro-cessing for measuring the similarity between two inputs.

unsymmetrical fault : unsymmetrical fault a fault on a three-phase power line in which the fault cur-rent is not equal in all three phases, e.g., a single-line-to-ground, double-line-to-ground or line-to-line fault.

unsymmetrical load : unsymmetrical load a load which forces the currents in the three-phase power line which supplies it to be unequal.

Up converter: it is a voltage step down and current step up convertor.

upconversion : up-down counter a register that is capable of operating like a counter and can be either incremented or decremented by applying the proper electronic signals.

up-conversion. : The process of translating a signal from an if to an rf by mixing that signal with a reference frequency. The process may be undertaken in single or double stages.

upconverter : up-down transformer See buck-boost transformer.

Up-converter. : A microwave mixer.

up-down counter : upconversion a nonlinear optical process in which a beam of light is shifted to higher frequency, for instance, through the process of sum-frequency generation.

up-down transformer : upconverter special type of microwave mixer that outputs the sum frequency signals of the input microwave RF frequency and the LO frequency. The up-conversion is useful if the microwave carrier frequency needs to be altered.

Upend Forging: A forging in which the metal is so placed in the die that the direction of the fiber structure is at aright angles to the faces of the die.

Upgrading: In castings, the removal and repair of discontinuities to raise the quality level of the casting beyond that which can be economically achieved by good foundry practice.

uplink : uplink in a cellular system, the commu-nication link from the mobile to the central base station. See also downlink. Also called reverse link.

Up-link. : A communications and/or command transmission from earth to a satellite.

upper frequency band edge : upper frequency band edge the upper cutoff frequency where the amplitude is equal to the maximum attenuation loss across the band.

upper side frequency : upper side frequency the sum frequency that is generated during the heterodyning pro-cess or during the amplitude-modulating pro-cess. For example, if a 500 kHz carrier sig-nal is amplitude-modulated with a 1 kHz fre-quency, the upper side frequency is 501 kHz.

Upper Yield Point (Also Yield Point): Denoted in yield point phenomenon as a distinct break from the elastic region accompanied by a drop in load, yet prior to plastic deformation in the stress strain curve in a low carbon steel.

Uprate: An increase in available electric generating unit power capacity due to a system or equipment modification. An uprate is typically a permanent increase in the capacity of a unit.

UPS: Uninterruptable Power Supply

UPS: Uninterruptible Power Supply

upsampling : upsampling a system that inserts $L - 1$ zeros between the samples of an input signal to form an output signal. An L -fold upsam-pler followed by an appropriate lowpass filter produces an output signal that is an interpo-lated form of the input signal, at L times the sampling rate. Upsampling also often refers to the operation of the upsampler and the low-pass filter together.

Upset: Working metal in such a manner that the cross sectional area of a portion or all of the stock is increased and length is decreased.

Upset Forging: A forging obtained by upset of a suitable length of bar, billet or bloom; formed by heading or gathering the material by pressure upon hot or cold metal between dies operated in a horizontal plane.

Upsetter : A machine, with horizontal action, used for making upset forgings.

Upsetting: (1) A metal working operation similar to forging. (2) The process of axial flow under axial compression of metal, as in forming heads on rivets by flattening the end of wire.

Upstream: The passage ahead of a device, normally at the inlet of direction of flow.

Uranium: A white malleable metal which is softer than steel. Its specific gravity is 18.7, it melts at a temperature of 2400oC.

Uranium (U): A heavy, naturally radioactive, metallic element (atomic number 92). Its two principally occurring isotopes are uranium-235 and uranium-238. Uranium-235 is indispensable to the nuclear industry because it is the only isotope existing in nature, to any appreciable extent, that is fissionable by thermal neutrons. Uranium-238 is also important because it absorbs neutrons to produce a radioactive isotope that subsequently decays to the isotope plutonium-239, which also is fissionable by thermal neutrons.

Uranium (U): A mildly radioactive element with two isotopes which are fissile (U-235 and U-233) and two which are fertile

(U-238 and U-234). Uranium is the basic fuel of nuclear energy.

Uranium concentrate: A yellow or brown powder obtained by the milling of uranium ore, processing of in situ leach mining solutions, or as a byproduct of phosphoric acid production.

Uranium deposit: A discrete concentration of uranium mineralization that is of possible economic interest.

Uranium endowment: The uranium that is estimated to occur in rock with a grade of at least 0.01 percent U₃O₈. The estimate of the uranium endowment is made before consideration of economic availability of any associated uranium resources.

Uranium hexafluoride (UF₆): A white solid obtained by chemical treatment of U₃O₈ and which forms a vapor at temperatures above 56 degrees Centigrade. UF₆ is the form of uranium required for the enrichment process.

Uranium hexafluoride (UF₆): A compound of uranium which is a gas above 56°C and is thus a suitable form in which to enrich the uranium.

Uranium importation: The actual physical movement of uranium from a location outside the United States to a location inside the United States.

Uranium mill: A plant where uranium is separated from ore taken from mines.

Uranium mill tailings: The sand-like materials left over from the separation of uranium from its ore. More than 99 percent of the ore becomes tailings.

Uranium Mill Tailings Radiation Control Act (UMTRA) of 1978: The act that directed the Department of Energy to provide for stabilization and control of the uranium mill tailings from inactive sites in a safe and environmentally sound manner to minimize radiation health hazards to the public. It authorized the Department to undertake remedial actions at 24 designated inactive uranium-processing sites and at an estimated 5,048 vicinity properties.

Uranium ore: Rock containing uranium mineralization in concentrations that can be mined economically, typically one to four pounds of U₃O₈ per ton or 0.05 percent to 0.2 percent U₃O₈.

Uranium oxide: Uranium concentrate or yellowcake. Abbreviated as U₃O₈.

Uranium oxide concentrate (U₃O₈): The mixture of uranium oxides produced after milling uranium ore from a mine. Sometimes loosely called yellowcake. It is khaki in colour and is usually represented by the empirical formula U₃O₈. Uranium is sold in this form.

Uranium property: A specific piece of land with uranium reserves that is held for the ultimate purpose of economically recovering the uranium. The land can be developed for production or undeveloped.

Uranium reserves: Estimated quantities of uranium in known mineral deposits of such size, grade, and configuration that the uranium could be recovered at or below a specified production cost with currently proven mining and processing technology and under current law and regulations. Reserves are based on direct radiometric and chemical measurements of drill holes and other types of sampling of the deposits. Mineral grades and thickness, spatial relationships, depths below the surface, mining and reclamation methods, distances to milling facilities, and amenability of ores to processing are considered in the evaluation. The amount of uranium in ore that could be exploited within the chosen forward-cost levels are estimated in accordance with conventional engineering practices.

Uranium resource categories (international): Three categories of uranium resources defined by the international community to reflect differing levels of confidence in the existence of the resources. Reasonably assured resources (RAR), estimated additional resources (EAR), and speculative resources (SR) are described below.

URC: Weatherproof wire.

URD: Underground Residential Distribution.

URD: Underground residential distribution.

URD : URD See underground residential distribution.

Urea Formaldehyde Resin: A thermosetting product of condensation from urea or thio urea and formaldehyde, soluble in water and used as a sand binder in core and mold compounds.

Urethane Wheels: Urethane Wheels are plastic wheels that are relatively hard wearing while also providing good traction. They are often used as casters for industrial equipment.

USACE (sometimes shortened to USCE in EIA tables): U.S. Army Corps of Engineers.

USART : USART See universal synchronous/ asynchronous receiver/transmitter.

Usascii.: See ascii.

USBR: United States Bureau of Reclamation.

USE: Underground Service Entrance conductor or cable.

USE: Underground service entrance cable, rubber-insulated, neoprene or XLP jacketed.

use bit : use bit in a paging system, a bit associated with a page entry in a lookup table which indicates that the page has been referenced since the last time the bit was reset. The bit is reset when it is read.

Useage agreement: Contracts held by enrichment customers that allow feed material to be stored at the enrichment plant site in advance of need.

Used and useful: A concept used by regulators to determine whether an asset should be included in the utility's rate base. This concept requires that an asset currently provide or be capable of providing a needed service to customers.

Useful thermal output: The thermal energy made available in a combined-heat-and-power system for use in any industrial or commercial process, heating or cooling application, or delivered to other end users, i.e., total thermal energy made available for processes and applications other than electrical generation.

user: Authority responsible for the use and maintenance of equipment.

User communications system. : In telecommunications, assembly of equipment and procedures which constitute a point of origin and/or termination of a channel or a circuit. Note. A user system may be a single equipment like a telephone set or a telecopy terminal, as well as a local distributing system or a message handling system.

user mode : user mode in a multitasking processor, the mode in which user programs are executed. In user mode, the program is prevented from executing instructions that could possibly disrupt the system and also from accessing data outside the user's specified area.

user state : user state a computer mode in which a user program is executing rather than a systems program. Some computers have two modes of operation: the system state is used when parts of the computer's operating system are executing and the user state is used when the computer is executing application programs.

user-visible register : user-visible register an alternative name for general purpose registers, emphasizing the fact that these registers are accessible to the instructions in user programs. The counterpart to user-visible registers are registers that are reserved for use by privileged instructions, particularly within the operating system.

USMA: Utility Supply Management Alliance, a utility industry conference held annually that is focused on the supplier/customer relationship.

USOC (Uniform Service Order Code): Bell system term to denote varying pin configurations on registered jacks (RJs).

utilisation: The process of exploiting (using) electrical energy for various purposes.

Utility: See Electric utility.

Utility demand-side management costs: The costs incurred by the utility to achieve the capacity and energy savings from the Demand-Side Management(DSM) Program. Costs incurred by consumers or third parties are to be excluded. The costs are to be reported in nominal dollars in the year in which they are incurred, regardless of when the savings occur. The utility costs are all the annual expenses (labor, administrative, equipment, incentives, marketing, monitoring and evaluation, and other) incurred by the utility for operation of the DSM Program, regardless of whether the costs are expensed or capitalized. Lump-sum capital costs (typically accrued over several years prior to start up) are not to be reported. Program costs associated with strategic load growth activities are also to be excluded.

Utility distribution companies: The entities that will continue to provide regulated services for the distribution of electricity to customers and serve customers who do not choose direct access. Regardless of where a consumer chooses to purchase power, the customer's current utility, also known as the utility distribution company, will deliver the power to the consumer.

Utility generation: Generation by electric systems engaged in selling electric energy to the public.

utility interface : utility interface the interface of the utility with power electronic systems. Utility interface issues include maintaining power quality with the proliferation of large power electronic loads in power system networks and the utility applications of power electronics for flexible AC transmission systems (FACTS).

Utility Sheet Aluminum: Mill finish coiled or flat sheet of unspecified composition and properties produced in specific standard sizes and suitable for general building trade usage.

utility : A regulated entity which exhibits the characteristics of a natural monopoly. For the purposes of electric industry restructuring "utility" refers to the regulated, vertically-integrated electric company.

Utility-interactive inverter: An inverter that can function only when tied to the utility grid, and uses the prevailing line-voltage frequency on the utility line as a control parameter to ensure that the Photovoltaic system's output is fully synchronized with the utility power.

Utility-sponsored conservation program: Any program sponsored by an electric and/or natural gas utility to review equipment and construction features in buildings and advise on ways to increase the energy efficiency of buildings. Also included are utility-sponsored programs to encourage the use of more energy-efficient equipment. Included are programs to improve the energy efficiency in the lighting system or building equipment or the thermal efficiency of the building shell.

utilization factor : utilization factor the ratio of the maximum demand on the system vs the rated capacity of the system.

utilization factor : The ratio of the maximum demand of a system or part of a system to the rated capacity of the system or part of the system.

utilization voltage : utilization voltage the voltage across the power input terminals of a piece of electrical equipment.

UTP (Unshielded Twisted Pair): Twisted-pair copper cable without metallic braid shielding - capable of high-speed voice and data transmission. The most common cabling used in the U.S. structured wiring.

UV cure: UV cure a post-development process by which the resist patterns are exposed to deep-UV radiation (and often baked at the same time) in order to harden the resist patterns for subsequent pattern transfer. The UV cure is a replacement for the hard bake step.

UV cure : UV PROM See erasable programmable read-only memory.

Uv Disinfection System: A UV Disinfection System uses Ultraviolet (UV) radiation to sterilize harmful bacteria.

Uv Radiometer: A UV radiometer is a measurement device used to determine the strength of ultraviolet radiation. Ultraviolet radiation is used in many different industries including food packaging, medical and cosmetic industries and in the use of tanning beds. The UV radiometer measures the intensity of the UV light in terms of intensity per unit area over a period of time.

UV PROM : V parameter describes the number of modes M in an optical fiber.

V: Voltage; Volt.

V: Varhished-cambic insulation, with fibrous covering.

V parameter : V-curves the characteristic curves that show the variation of the armature current versus the field current in synchronous motors.

VA: 1) Electrical capacity or electrical load, expressed as Volts x Amps. 2) Volt Ampere rating designates the output which a transformer can deliver at rated voltage and frequency without exceeding a specified temperature rise.

VAC: Volts AC.

Vac: Volts ac

Vacancy: A type of structural imperfection in which an individual atom site is temporarily unoccupied.

Vacuum Annealing: Vacuum is best characterized as a lack of atmosphere (i.e. air, oxygen or other gases). Hence when metals or alloys are heated to high temperatures in a vacuum furnace, there is essentially no oxygen present to oxidize and discolor the surface of the material. Unfortunately, vacuum annealing is not conducive to strand annealing (i.e. uncoiling, heating and recoiling). Titanium rolled Ulbrich is annealed in coil form in vacuum furnaces by outside heat treaters.

vacuum capacitor : vacuum capacitor a capacitor with a vacuum between its plates.

vacuum circuit breaker : vacuum circuit breaker a power circuit breaker where a vacuum chamber is used as an insulating and arc clearing medium.

Vacuum Circuit Breakers: Circuit breakers, normally applied at medium voltages, that use vacuum interrupters to extinguish the electrical arc and shutoff flowing current.

Vacuum Circuit Breakers: A vacuum circuit breaker utilizes a vacuum to extinguish arcing when the circuit breaker is opened and to act as a dielectric to insulate the contacts after the arc is interrupted.

Vacuum Degassing: An advanced steel refining facility that removes oxygen, hydrogen and nitrogen under low pressures (in a vacuum) to produce ultra low carbon steel for demanding electrical and automotive applications. Normally performed in the ladle, the removal of dissolved gases results in cleaner, higher quality, more pure steel

Vacuum distillation: Distillation under reduced pressure (less the atmospheric) which lowers the boiling temperature of the liquid being distilled. This technique with its relatively low temperatures prevents cracking or decomposition of the charge stock.

Vacuum evaporation: Method of depositing thin coatings of a substance by heating it in a vacuum system.

Vacuum evaporation: The deposition of thin films of semiconductor material by the evaporation of elemental sources in a vacuum.

Vacuum Feeding Systems: A Vacuum Feeding System uses the venturi effect to pull fluids or fluidized solids from one system to another. Feed rate is controlled by the input air pressure.

Vacuum Gauges: A visual indicator of pressure that is set for 'zero' psi at atmospheric pressure and includes a dial which will continue to indicate the level of pressure below atmospheric pressure.

Vacuum Generators: A Vacuum Generator is device that utilizes the venturi effect to create a vacuum. These are more economical than vacuum pumps but cannot achieve high vacuum.

vacuum insulation : vacuum insulation any insulation scheme which depends upon the dielectric capabilities of a high vacuum.

Vacuum Interrupter: A sealed "bottle" containing contacts of a switch inside a very high vacuum. When the contacts are parted in the vacuum, as there is no gas in the bottle to ionize, the current flow is quickly extinguished.

Vacuum Interrupter: Vacuum interrupters are special types of high-voltage circuit breakers.

Vacuum Melting: Melting in a vacuum to prevent contamination from air, as well as to remove gases already dissolved in the metal; the solidification may also be carried out in a vacuum or at low pressure.

Vacuum Oxygen Decarburization (Vod): WHAT Process for further refinement of stainless steel through reduction of carbon content. WHY The amount of carbon in stainless steel must be lower than that in carbon steel or lower alloy steel (i.e., steel with alloying element content below 5%). While electric arc furnaces (EAF) are the conventional means of melting and refining stainless steel, VOD is an economical supplement, as operating time is reduced and temperatures are lower than in EAF steelmaking. Additionally, using VOD for refining stainless steel increases the availability of the EAF for melting purposes.

HOW Molten, unrefined steel is transferred from the EAF into a separate vessel, where it is heated and stirred by an electrical current while oxygen enters from the top of the vessel. Substantial quantities of undesirable gases escape from the steel and are drawn off by a vacuum pump. Alloys and other additives are then mixed in to refine the molten steel further.

Vacuum Refining: Melting in a vacuum, usually by electrical induction, to remove gaseous contaminants from the metal.

Vacuum tube (VT, electron tube or valve): It is a device sometimes used to amplify electronic signals.

Vacuum zero: The energy of an electron at rest in empty space; used as a reference level in energy band diagrams.

vagueness : vagueness a property indicating the lack of specifics and clarity and which is allied to imprecision and fuzziness.

Valence band: The highest energy band in a semiconductor that can be filled with electrons.

valence band : valence band the lower of the two partially filled bands in a semiconductor. See also conduction band.

Valence state; Valence level energy, bound state: Energy content of an electron in orbit about an atomic nucleus.

valid bit : valid bit a bit used in caches and virtual memories that records whether the cached item or page contains valid data.
validation : validation (1) in electronic active and passive device modeling, the pass/fail process in which a completed, ready to use model is used in a simulation, then compared to an intended application, and is determined to suitably predict reality.(2) a review to establish the quality of a software product for its operational purpose.

Validation function. : Used in format line 15 and is commonly known as the end of transmission sequence.

validation set : validation set the set of data to evaluate the performance of a system that was trained on a separate set of

data.

valley filling : A form of load management that increases or builds, off-peak loads. This load shape objective is desirable if a utility has surplus capacity in the off-peak hours. If this strategy is combined with time-of-day rates, the average rate for electricity can be lowered.

valuation : valuation in electronic active and passive device modeling, valuation is a measure of the intrinsic value of a model in predicting a new application, condition or change in the device. The most valuable model (assigned a valuation coefficient of 1.0) would be a complete omnipotent physical based model that could be utilized to predict exact circuit re-sponse. The least valuable model (assigned a valuation coefficient of 0.0) such as a lookup table, would only be able to predict a circuit response to a specific set of conditions for a very specific device excited in a specific way.

Value (of shipments): The value received for the complete systems at the company's net billing price, freight-on-board factory, including charges for cooperative advertising and warranties. This does not include excise taxes, freight or transportation charges, or installation charges.

Value added by manufacture: A measure of manufacturing activity that is derived by subtracting the cost of materials (which covers materials, supplies, containers, fuel, purchased electricity, and contract work) from the value of shipments. This difference is then adjusted by the net change in finished goods and work-in-progress between the beginning- and end-of-year inventories.

Valve: A device for controlling the passage of fluid through a piped duct, especially an automatic device allowing movement in one direction.

Valve Positioners: A Valve Positioner is a system that compares the actual position of a valve to its commanded position and adjusts as necessary. This is accomplished via process monitoring and sensor feedback to the valve controller.

Valve Regulated Sealed Cell (Battery): A battery in which the cells are closed but have a valve which allows the escape of gas if the internal pressure exceeds a predetermined value (pressure).

vampire tap: It is a device for physically connecting a station to a network that uses 10BASE5 cabling.

van de Graf generator : van de Graf generator a high-voltage device that generates high static voltages on a sphere. It is driven by a mechanical belt, which delivers the charges.

Van, value-added network . : A network of data communications facilities leased from a common carrier - with extra equipment that provides more services. Many pdns are also vans.

Vander Lugt filter : Vander Lugt filter encoded optical mask for representing, in the Fourier-transform domain, the reference or library functions needed in an image correlator; encoding is performed holographically.

vanishing point : vanishing point the point in the perspective projection plane in which a system of 3-D parallel lines converge.

Vapnik–Chervonenk (VC) dimension : Vapnik–Chervonenk (VC) dimension a measure of the expressive power of a learning system with binary or bipolar outputs. For neural networks it is closely related to the number of weights in the network. For single-layer networks it is simply equal to the number of weights (including biases) but for multilayer and other networks, analytic expressions for VC dimension are not available.

vapor cooling : It is a microprocessor-cooling technology that works according to the same principle as a refrigerator, freezer or A.C.

vapor cooling : vapor cooling a cooling technique for power vacuum tubes utilizing the conversion of hot water to steam as a means of safely conducting heat from the device and to a heat sink.

Vapor displacement: The release of vapors that had previously occupied space above liquid fuels stored in tanks. These releases occur when tanks are emptied and filled.

Vapor Phase: In the coretype transformer, the coreandcoil assembly is independent of the tank, so that the assembly is allowed to completely dry. When drying the coreandcoil assembly, vapor phase drying method is used, in which special oil vapor is sprayed on the

Vapor Pressure: The measure of pressure at which a specific fluid will change to a gas.

Vapor retarder: A material that retards the movement of water vapor through a building element (walls, ceilings) and prevents insulation and structural wood from becoming damp and metals from corroding. Often applied to insulation batts or separately in the form of treated papers, plastic sheets, and metallic foils.

Vapor-dominated geothermal system: A conceptual model of a hydrothermal system where steam pervades the rock and is the pressure-controlling fluid phase.

VAR: Volt Ampere Reactive. Also see "Reactive Power".

varactor : varactor a reverse biased PN or Schottky diode that uses the voltage variable depletion region as a tuning element or as a nonlinear frequency multiplier.

varactor diode : varactor diode a diode designed to have a repeatable and high capacitance vs. reverse voltage characteristic. A two terminal semi-conductor device in which the electrical characteristic of primary interest is the voltage dependent capacitance.

varactor tuner : varactor tuner a tuning circuit at the in-put of a television receiver that uses a varac-tor diode. The tuning capability comes from the characteristic of a varactor, or varicap, to function as a voltage-sensitive capacitance.

Variable: A factor or condition which can be measured, altered or controlled, i.e., temperature, pressure, flow, liquid level, humidity, weight, chemical composition, colour, etc.

Variable air volume (VAV) system on the heating and cooling system: A means of varying the amount of conditioned air to a space. A variable air volume system maintains the air flow at a constant temperature, but supplies varying quantities of conditioned air in different parts of the building according to the heating and cooling needs.

variable bit rate (VBR) : variable bit rate (VBR) describes a traffic pattern in which the rate at which bits are transmitted varies over time; such patterns are also referred to as bursty. VBR sources often result from compressing CBR sources, for example, a 64 kbps voice source in its raw form has a constant bit rate; after compression by removing the silence intervals, the source becomes VBR.

variable cost : Costs, such as fuel costs, that depend upon the amount of electric energy supplied.

variable frequency drive : variable frequency drive electric drive system in which the speed of the motor can be varied by varying the frequency of the input power.

Variable fuel vehicle: See Flexible fuel vehicle.

variable length code : variable length code to exploit redundancy in statistical data, and to reduce average number of bits per word luminance levels having high probability are assigned short code words and those having low probability are assigned longer code words. This is called variable length coding or entropy coding. See also entropy coding.

variable loss : variable loss machine loss that changes with a change in the mode of machine operation such as loading, temperature and current. For example, in a transformer, the winding losses are a function of the load current, while the core losses are almost independent of the load current.

variable polarity plasma arc welding (VP-PAW) : variable polarity plasma arc welding (VP-PAW) a welding process that produces coalescence of metals by heating them with a constricted variable polarity arc between an electrode and the parts to be joined (transferred arc) or between the electrode and the constricting nozzle (transferred arc). Shielding is obtained from the hot, ionized gas issuing from the torch as well as from a normally employed auxiliary shielding gas source. Pressure is not applied and filler metal may or may not be added.

variable reflectivity mirror : variable reflectivity mirror mirror in which the reflection profile varies across the mirror surface; useful for discriminating against high-order transverse modes in a resonator. See also tapered mirror.

variable reluctance machine : variable reluctance machine salient pole machine consisting of stators having concentrated excitation windings and a magnetic rotor devoid of any windings, commutators, or brushes. The machine operates on the principle of varying reluctance along the length of the air gap. Torque is produced by the tendency of the rotor to align itself with the stator produced flux waves in such a way that the stator produced flux-linkages are maximized. The motor operates continuously in either direction of rotation with closed loop position feedback.

Variable Resistors : Electric component that used to vary the amount of the current that flows through a circuit.

variable resolution hierarchy : variable resolution hierarchy an approach where images corresponding to the levels of the hierarchy vary in spatial resolution. This results in a pyramid structure where the base of the pyramid represents the full resolution and the upper levels have lower resolution.

variable speed AC drive : variable speed AC drive an AC motor drive that is capable of delivering variable frequency AC power to a motor to cause it to operate at variable speeds. Induction motors and synchronous motors are limited to operation at or near synchronous speed when a particular frequency is applied. Variable speed drives rectify the incoming AC source voltage to create a DC voltage that is then inverted to the desired frequency and number of phases.

variable speed DC drive : variable speed DC drive a DC motor controller that allows the DC motor to operate over a wide speed range. A common type of variable speed DC drive uses a separately excited DC motor. Armature voltage control is used to provide operation below base speed, and field weakening is used to provide operation above base speed.

Variable Speed Motor: A motor with a positively damped speed-torque characteristic which lends itself to controlled speed applications.

Variable Speed Pumps: A pump is an electro-mechanical device used to move a substance, usually a liquid or gas, from one location to another. In a variable speed pump, the drive system is varied in order to control the pump flow rate, thereby allowing the pump to run only at the flow rate necessary at any given time. Variable frequency drive systems are typically used to adjust the drive system and therefore control the pump speed. Variable speed pumps improve the overall efficiency of a system and increase the life of the system components, making them a very cost effective upgrade to system with constant speed pumps.

variable-length instruction : variable-length instruction the fact that the machine language instructions for a computer have different numbers of bits with the length dependent on the type of instruction.

Variable-speed wind turbines: Turbines in which the rotor speed increases and decreases with changing wind speed, producing electricity with a variable frequency.

variational problem : variational problem a problem in which solving a differential equation is equivalent to seeking a function that minimizes an integral expression.

Varistor: variable resistor

Varnish: A colorless, transparent finish applied over a decorative system to protect the substrate and inks and improve gloss.

Vars: (or KVAR) Unit used to measure the part of the electrical power that is used to magnetize the iron in an electrical motor or transformer so that the motor or transformer will work. You get no work output from VARS, but they are always in the circuit.

Varying-Speed Motor: A Motor whose speed varies with the load, ordinarily decreasing when the load increases.

Vault: An enclosure, above or below ground, which personnel may enter and which is used for the purpose of installing, operating, or maintaining equipment or cable.

VAWT: See Vertical-Axis Wind Turbine

VCB: Vacuum Circuit Breaker.

VCB: Varnished-cambric insulation, cotton braid, flame-retarding, moisture-resisting finish.

VCL: Varnished-cambric insulation, lead-covered cable. Ends must be hermetically sealed.

VD: Indicates a twin wire having two type V conductors laid parallel under an outer fibrous covering.

VDC: Volts DC.

Vdc: Volts DC

VDEW: Term used for IEC 608705103 protocol. The VDEW protocol is a subset of the IEC 608705103 protocol.

Vdt, video display terminal. : Cathode ray tube terminal.

Vdu, video display unit. : Same as vdt.

vector controlled induction motor : vector controlled induction motor a variable speed controller and motor in which the magnetizing and torque producing components of current are controlled separately. Some vector drives requires rotor position sensors. Vector controlled induction motors can operate over a wider speed range, and may produce rated torque even at zero speed, much like a DC motor. Thus, vector controlled induction motors are often used for applications that might otherwise require a DC motor drive.

vector field : vector field when the field needed to describe some physical phenomenon has several components, it is customary to represent such a field by a vector function $V_x; y; z/$ which depends on the space coordinates $x; y; z$.

Vector Group Compensation: A feature of digital and numerical relays that compensates for the phase angle shift that occurs in transformers due to use of dissimilar winding connections. For example transformers connected in delta/star.

vector image : vector image an image consisting of mathematical descriptions of the objects in the scene, e.g., equations for lines and curves. The image is independent of resolution so it can be stretched, rotated and skewed with no degradation. Vector images are often used in CAD applications. See also bitmapped image, CAD, image.

vector network analyzer : vector network analyzer a microwave receiver designed to measure and process the magnitude and phase of transmitted and reflected waves from the linear network under test.

vector operation : vector operation a hardware instruction that performs multiple similar operations on data arranged in one or more arrays.

vector processor : vector processor a computer architecture with specialized function units designed to operate very efficiently on vectors represented as streams of data.

vector quantization (VQ) : vector quantization (VQ) quantization applied to vectors or blocks of outputs of a continuous source. Each possible source block is represented by a reproduction vector chosen from a finite set (the "codebook"). According to rate-distortion theory, vector quantization (VQ) is able to perform arbitrarily close to the theoretical optimum if the lengths of the input blocks are permitted to grow without limit. The method was suggested by Claude Shannon in his theoretical work on source coding (during the late 1940s and the 1950s), but has found practical importance first in recent years (during the 1980s and 1990s) because of the relatively high complexity of implementation and design compared to scalar methods. Also referred to as "block source coding with a fidelity criterion."

vector quantization encoding : vector quantization encoding an encoding scheme whereby an image is decomposed into n dimensional image vectors. Each image vector is compared with a collection of representative template or codevector from a previously generated codebook. The best match codevector is chosen using a minimum distortion rule. Then the index of the codevector is transmitted. At the receiver this is used with a duplicate codebook to reconstruct the image. Usually called VQ encoding.

vector quantizer (VQ) : vector quantizer (VQ) a device that performs vector quantization.

vector space : vector space an algebraic structure comprised of a set of elements over which operations of vector addition and scalar multiplication are defined. In a linear forward error control code, code words form a vector space when addition and multiplication are defined in terms of element-wise operations from the finite field of code symbol values.

vector stride : vector stride the number of consecutive memory addresses from the beginning of one element to the next of a vector stored in memory. Also used to refer to the difference in vector index between two consecutively accessed vector elements.

vector wave : vector wave equation an equation (or more specifically, a set of scalar equations) governing the various components of a vector wave, the Maxwell-Heaviside equations, for example.

vector wave equation : vector wave equation that cannot be adequately described in terms of a single field variable.

vectored interrupt : vectored interrupt an interrupt request whereby the processor is directed to a pre-determined memory location, depending on the source of the interrupt, by the built-in internal hardware. In the X86 processors, the addresses are stored in an array in memory (a mathematical vector) and indexed by the interrupt number. In the 8080 and Z80, the interrupt number becomes part of a CALL instruction with an implied address that is executed on an interrupt cycle.

vectorscope : vectorscope an oscilloscope-type device used to display the color parameters of a video signal. A vectorscope decodes color information into R-Y and B-Y components, which are then used to drive the X and Y axis of the scope. The total lack of color in a video signal is displayed as a dot in the center of the vectorscope. The angle, distance around the circle, magnitude, and distance away from the center indicate the phase and amplitude of the color signal.

vee system : vee system a 3-level system in which the highest two energy states are coupled by electromagnetic fields to a common, intermediate, lower state. This system is so named because schematic representations of it often look like a capital letter V.

Vegetable Oils: Oils extracted from plants, used as drying oils in oil core manufacture. Linseed oil is an example.

Vehicle fuel consumption: Vehicle fuel consumption is computed as the vehicle miles traveled divided by the fuel efficiency reported in miles per gallon (MPG). Vehicle fuel consumption is derived from the actual vehicle mileage collected and the assigned MPGs obtained from EPA certification files adjusted for on-road driving. The quantity of fuel used by vehicles.

Vehicle fuel efficiencies: See Miles per gallon.

Vehicle fuel expenditures: The cost, including taxes, of the gasoline, gasohol, or diesel fuel added to the vehicle's tank. Expenditures do not include the cost of oil or other items that may have been purchased at the same time as the vehicle fuel.

Vehicle identification number (VIN): A set of codes, usually alphanumeric characters, assigned to a vehicle at the factory and inscribed on the vehicle. When decoded, the VIN provides vehicle characteristics. The VIN is used to help match vehicles to the EPA certification file for calculating MPGs.

Vehicle importer: An original vehicle manufacturer (of foreign or domestic ownership) that imports vehicles as finished products into the United States.

Vehicle miles traveled (VMT): The number of miles traveled nationally by vehicles for a period of 1 year. VMT is either calculated using two odometer readings or, for vehicles with less than two odometer readings, imputed using a regression estimate.

Vehicle Monitoring System: A Vehicle Monitoring System can refer to any system used to track the location or diagnostics of a vehicle remotely. GPS is an example of a widely used vehicle monitoring system.

Veiling Luminance: A luminance superimposed on the retinal image which reduces its contrast. It is this veiling effect produced by bright sources or areas in the visual field that results in reduced visual performance and visibility.

Veining: A type of sub boundary structure that can be delineated because of the presence of a greater than average concentration of precipitate or solute atoms.

Veins: A discontinuity on the surface of a casting appearing as a raised, narrow, linear ridge that forms upon cracking of the sand mold or core due to expansion of the sand during filling of the mold with molten metal.

Velocity: It is also called speed and also defined as ratio of distance to the time.

velocity error: velocity error the final steady difference between a ramp setpoint and the process out-put in a unity feedback control system. Thus, it is the asymptotic error in position that arises in a closed loop system that is commanded to move with constant velocity. See also acceleration error and position error.

velocity error constant: velocity error constant a gain K_v from which the velocity error e_v is readily determined. It is a concept that is useful in the design of unity feedback control systems since it transforms a constraint on the final error to a constraint on the gain of the open loop system. The relevant equations are

Velocity Factor: It is the fraction of speed at which the signal travels when compared to a signal travelling in free space.

velocity filtering : velocity filtering means for discriminating signals from noise or other undesired signals because of their different apparent velocities.

velocity of light: velocity of light in vacuum, a constant equal to 299792458 meters/second. In other media, equal to the vacuum value divided by the refractive index of the medium.

Velocity of Propagation: In cable measurements, a function of dielectric constant. The transmission speed of an electrical signal down a length of cable compared to speed in free space - expressed as a percentage of speed in free space.

velocity saturation : velocity saturation a physical process in a semiconductor where the carrier velocity becomes constant independent of the electric field due to high energy scattering and energy loss, compared to low electric field transport where the velocity is linearly related to the field by the mobility.

Velocity Transducers: A Velocity Transducer is a device for measuring velocity. They are often used to measure flow speed in fluid processing.

Vent Cap (Battery): The plug on top of a cell that can be removed to check and change the level of the electrolyte.

Vent Cap (Battery): The cap given on battery having a hole to cross the gases.

Vent Mark: A small protrusion on a forging resulting from the entrance of metal into a die vent hole.

Vent Valve: A valve that may be manually opened to allow air or fluid or a combination of both to be exhausted into a lower pressure chamber or to the atmosphere.

Vent Valve (Battery): A normally sealed mechanism which allows the controlled escape of gasses from within a cell.

Vent Valve (Battery): the both side valve or port given in batteries cells to cross or remove the gases.

Vented: Natural gas that is disposed of by releasing to the atmosphere.

Vented natural gas: See vented.

Vented vault: A vault that has provision for air changes using exhaust flue stacks and low level air intakes operating on differentials of pressure and temperature providing for airflow which precludes a hazardous atmosphere from developing.

Vented/Flared: Gas that is disposed of by releasing (venting) or burning (flaring).

Ventilated: Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes or vapors.

Ventilation system: A method for reducing methane concentrations in coal mines to non-explosive levels by blowing air across the mine face and using large exhaust fans to remove methane while mining operations proceed.

Venting: Perforation with a vent wire of the sand over and around a mold cavity to assist in the escape of the gases.

Venting (Battery): The release of gas from a cell, either controlled (through a vent) or accidental.

Venting (Battery): the action of removing the produced gases into battery.

Venturi Throat Dampers: North and South. Common to both boilers.

Venturi Valve: Valve that contains nozzle openings arranged in a 360 B0 pattern, which is often referred to as a doughnut due to its shape. Water is fed through the Venturi at a high pressure level and the water flow develops suction on the line that can be used for various purposes.

Venturis: Perform the primary scrubbing of waste gases, by introducing water to waste heat gases.

verification: verification the process of proving that the implementation of hardware or software meets the published system requirements.

verification kit : verification kit known impedance standards traced to NIST, other than calibration standards, used to verify the calibrated performance of a vector network analyzer system.

Verify. : To ensure that the meaning and phraseology of the transmitted message conveys the exact intention of the originator.

Versa Module Europe bus (VME bus) : Versa Module Europe bus (VME bus) a standardized processor backplane bus system originally developed by Motorola. The bus allows multiple processors to share memory and I/O devices.

Vertical Axis Casting Machine: A centrifugal casting machine in which the axis of rotation of the mold is vertical

vertical cavity laser : vertical cavity laser semiconductor laser in which the electromagnetic fields propagate in a direction perpendicular to the amplifying plane (the vertical direction).

Vertical cavity surface emitting laser (VCSEL): It is a specialized laser diode that promises to revolutionize fiber optic communications by improving efficiency and increasing data speed.

vertical deflection : vertical deflection the direction of an entity is caused to move by some physical action; commonly describes the vertical movement of an electron beam caused by electro-static or magnetic forces applied to produce a required scan. Magnetic deflection is frequently used with a CRT video display and requires a large deflection angle.

Vertical integration: The combination within a firm or business enterprise of one or more stages of production or distribution. In the electric industry, it refers to the historical arrangement whereby a utility owns its own generating plants, transmission system, and distribution lines to provide all aspects of electric service.

vertical integration : An arrangement whereby the same company owns all the different aspects of making, selling, and delivering a product or service.

vertical microinstruction : vertical microinstruction a field that specifies one microcommand via its op code. In practice, microinstructions that typically contain three or four fields are called vertical.

Vertical Milling: Vertical Milling is a machining process that uses a rotating cutter for material removal. The cutter is so that its axis of rotation is vertical. The majority of modern machining centers are vertical mills.

Vertical multijunction cell: A compound cell made of different semiconductor materials in layers, one above the other.

Sunlight entering the top passes through successive cell barriers, each of which converts a separate portion of the spectrum into electricity, thus achieving greater total conversion efficiency of the incident light. Also called a multiple junction cell. See 'multijunction device'; 'split-spectrum cell.'

vertical polarization : vertical polarization a term used to identify the position of the electric field vector of a linearly polarized antenna or propagating EM wave relative to a local reference, usually the ground or horizon. A vertically polarized EM wave is one with its electric field vector aligned perpendicular to the local horizontal.

vertical roll : vertical roll in television, the apparent continuous upward or downward movement of the picture, resulting from the lack of synchronization between the transmitter and receiver.

vertical sync pulse : vertical sync pulse a signal interval of the NTSC composite video signal provided for the synchronization of the vertical deflection system; the vertical sync interval has a duration of three horizontal lines and is serrated with six pulses. The vertical sync interval starts after six equalizing pulses (3 horizontal line periods) that identify the beginning of the vertical blanking interval. The vertical serration preserves the horizontal line synchronization information during the vertical sync pulse interval with the one-half horizontal line time-signal transition from the composite video blanking signal level to the sync signal level. The serrated vertical pulse duration is at the blanking level for 7 1% of the horizontal line time.

Vertical Turbine Pumps: A Vertical Turbine Pump is used for pumping fluids up a large vertical distance. A turbine (impeller) is mounted on a vertical shaft which is attached to a motor. Multiple impellers (stages) maybe mounted on the shaft to provide greater lifting power.

Vertical Water Storage Tanks: A Vertical Water Storage Tank is used to store water. Vertical tanks can provide higher pressurization compared to horizontal tanks of equal volume.

Vertical-axis wind turbine (VAWT): A type of wind turbine in which the axis of rotation is perpendicular to the windstream and the ground.

Vertical-break switch: A switch in which the travel of the blade is in a plane perpendicular to the plane of the mounting base.

vertically integrated utility : vertically integrated utility a utility in which generation, transmission, and distribution divisions are all owned by a single entity.

Very high frequency: It is the radio frequency range from 30MHz to 300MHz.

very high frequency VHF: Radio frequencies in the range 30 MHz to 300 MHz.

very high grade messaging. : The electronic mechanism for exchanging information of the greatest strategic importance to national security and is only available to a limited user group.

very high-speed digital subscriber line (VDSL) : very high-speed digital subscriber line (VDSL) a digital subscriber line (DSL) that provides very high rates (13 Mbps, 26 Mbps, and 52 Mbps) through short sub-scriber loops (1 to 3 kft). A VDSL may support asymmetric rates between the customer premise and the central office.

Very Large Scale Integration: It is a process of creating an IC by combining thousands of transistors into a single chip.

very long instruction word (VLIW) : very long instruction word (VLIW) a computer architecture that performs no dynamic analysis on the instruction stream and executes operations precisely as ordered in the instruction stream.

very-large-scale-integration (VLSI): very-large-scale-integration (VLSI) (1) a technology that allows the construction and interconnection of large numbers (millions) of transistors on a single integrated circuit.

Vessel: A ship used to transport crude oil, petroleum products, or natural gas products. Vessel Ultra Large Crude Carrier (ULCC), Very Large Crude Carrier (VLCC), Other Tanker, and Specialty Ship (LPG/LNG). See Tanker and Barge.

Vessel bunkering: Includes sales for the fueling of commercial or private boats, such as pleasure craft, fishing boats, tugboats, and ocean-going vessels, including vessels operated by oil companies. Excluded are volumes sold to the U.S. Armed Forces.

Vessel Cover: (also called 'Hood') Section of the boiler tubes that are located directly over the steel making vessel. The tubes are in the entry area of the heat and waste gases during steel making.

vestigial sideband : vestigial sideband (1) a portion of one sideband in an amplitude modulated signal, remaining after passage through a selective filter. (2) Amplitude modulated signal in which one sideband has been partially or largely suppressed. (3) The small amount of energy emitted in the unused sideband in a single-sided transmitter.

vestigial sideband (VSB): it's a modulation technique that encodes data by varying the amplitude of a single carrier frequency.

VG: Varnished-glass tape over a flexible copper conductor. Varnished-glass or nylon braid. 600V or 3000V, 130°C

VHF: VHF very high frequency. See VHF power.

VHF (very high frequency): It is the radio frequency range from 30MHz to 300MHz.

Vhf omni-range (1). : In aviation, a short range very-high frequency, omni-directional beacon which provides an indication in an aircraft of its bearing with respect to the beacon, or left-right indication.

Vhf omni-range (2). : An air navigational radio aid which uses phase comparison of a ground transmitted signal to determine bearing. This term is derived from the words "very high frequency omnidirectional radio range". Abbreviated vor.

VHF power : VHF power in television, the band of frequencies ranging from 30MHz to 300MHz.

VHS (Video Home System): It is a cassette tape used with VCR players and early camcorders.

VHSIC : VHSIC acronym for very high speed integrated circuit.

via : via a hole in the insulator between two metal layers on a multilayer integrated circuit that is etched and filled with a conducting material so that the two metal layers are electrically connected. Via resistance is typically less than 10 ohms.

via hole : via hole chemically etched from the back of a MMIC wafer and filled with metal in such a way as to allow an electrical connection between the backside of a wafer and the topside of the wafer.

Vibrating Conveyors: A Vibrating Conveyor is a material transport system that has implemented vibration to aid in steady and predictable material movement.

vibration damper : vibration damper any of a number of devices mounted on a power line to reduce vibrations caused by wind.

vibrational transition : vibrational transition transition between vibrational states of a molecule.

Vibrator Motors: A Vibrator Motor is a motor used to drive a vibrator. Vibrator motors must be designed for long service life with a purposely unbalanced load.

Vibrator Reed Steel: Hardened, tempered and white polished extra precision rolled. Carbon content about 1.00. Steel must withstand great fatigue stresses.

Vibratory Feeders: A Vibratory Feeder is a device that feeds solid material with the aid of vibration, such as a shaker table, chute, or vibrating screen.

Vickers Diamond Pyramid Hardness Tester: Patented indentation hardness machine. See Hardness

Vickers Hardness (Test): Standard method for measuring the hardness of metals, particularly those with extremely hard surfaces; the surface is subjected to a standard pressure for a standard length of time by means of a pyramid shaped diamond. The diagonal of the resulting indentation is measured under a microscope and the Vickers Hardness value read from a conversion table.

Victim. : In electronic warfare. The term used to describe the electronic equipment, or user thereof, against which ECM is being used.

VID: Voltage Identification Digital

video : video (1) representation of moving images for storage and processing. Often used interchangeably with television. In particular, "video signal" and "television signal" are synonyms.(2) a particular stored sequence of moving images, e.g., on a tape or within a database.

video amplifier : video amplifier (1) in television, the wideband stage (or stages) that amplifies the picture signal and presents it to the picture tube.(2) A similar wideband amplifier, such as an instrument amplifier or preamplifier having at least a 4-MHz

bandwidth.

video coding : video coding compression of moving images. Coding can be done purely on an Intraframe (within-frame) basis, using a still image coding algorithm, or by exploiting temporal correlations between frames (inter-frame coding). In the latter case, the encoder estimates motion between the current frame and a previously-coded reference frame, encodes a field of motion vectors that describe the motion compactly, generates a motion-compensated prediction image and codes the difference between this and the actual frame with an intraframe residue coder — typically the 8 8 discrete cosine transform. The decoder receives the motion vectors and encoded residue, constructs the prediction picture from its stored reference frame and adds back the difference information to recover the frame. See also MPEG.

video graphics adapter (VGA) : video graphics adapter (VGA) a video adapter proposed by IBM in 1987 as an evolution of EGA. It is capable of emulating EGA, CGA, and MDA. In graphic mode, it allows to reach 640 480 pixels (wide per high) with 16 colors selected from a pallet of 262144, or 320 240 with 256 colors selected from a pallet of 262144.

Video insertion. : The technique by which symbol and graphic information may be simultaneously presented on a cathode ray tube.

video RFI : video RFI undesired radio-frequency signals that compete with the desired video signal.

video signal: video signal the video signal in the U.S. is defined by the NTSC standard. See National Television System Committee.

video signal processing : video signal processing The area of specialization concerned with the processing of time sequences of image data, i.e., video.

video transmission : video transmission the combined amplitude-modulated carrier, sync, and blanking pulses that make up a video signal.

VIN: See Vehicle Identification Number

VIN (vehicle identification number): A set of about 17 codes, combining letters and numbers, assigned to a vehicle at the factory and inscribed on a small metal label attached to the dashboard and visible through the windshield. The VIN is a unique identifier for the vehicle and therefore is often found on insurance cards, vehicle registrations, vehicle titles, safety or emission certificates, insurance policies, and bills of sale. The coded information in the VIN describes characteristics of the vehicle such as engine size and weight.

Vinyl: Vinyl resins are copolymers with vinyl chloride and vinyl acetate as the major film formers. They offer toughness, flexibility, and adhesion and are considered flavor free.

Vinyl Adhesives: A Vinyl Adhesive is a widely used bonding agent for plastics that dries clear and is waterproof after curing.

Vinyl Alkyd: A type of resin consisting of a physical mixture of vinyl with alkyd to improve performance characteristics such as flexibility.

Vinyl Tape: Vinyl Tape is conforming and impermeable tape that is used in many applications, and especially electrical protection and repair.

VIP: Vulcanized interlinked polyethylene.

Virbrator: A device, operated by compressed air or electricity, for loosening and withdrawing patterns from a mold, or for vibrating a hopper or chute to promote the flow of material from the hopper or chute.

Virgin coal: Coal that has not been accessed by mining.

Virgin Metal: Metal obtained directly from ore and not used before.

virtual address : virtual address (1) an address that refers to a location of virtual memory.(2) the address generated by the processor in a paging (virtual memory) system. Compare with real address.

Virtual call, virtual circuit. : A circuit established only for the duration of the call, which may share a physical circuit with other virtual circuits.

virtual channel : virtual channel a concept used to describe unidirectional transport of ATM cells associated by a common unique identifier value.

virtual circuit : virtual circuit an abstraction that enables a fraction of a physical circuit to be allocated to a user. To a user, a virtual circuit appears as a physical circuit; multiple virtual circuits can be multiplexed onto a single physical circuit.

virtual connection : virtual connection a representation of the circuit between the input leads of an ideal op-amp. The voltage across and the current through a virtual connection are both zero. If one input lead of an ideal op-amp is connected to ground, the virtual connection is often termed a virtual ground.

virtual DMA : virtual DMA DMA in which virtual addresses are translated into real addresses during the I/O operation.

virtual instrument : virtual instrument an instrument created through computer control of a collection of instrument resources with analysis and display of the data collected.

Virtual kill switch: It is a mechanism used to shut down or disable machinery or a device or program

virtual machine : virtual machine a process on a multi-tasking computer that behaves as if it were a stand-alone computer and not part of a larger system.

virtual memory: virtual memory main memory as seen by the processor, i.e., as defined by the processor-generated addresses, in contrast with real memory, which is the memory actually installed or that is immediately addressable. The virtual memory corresponds to the secondary storage, and data is automatically transferred to and from real memory as needed. In paged virtual memory, secondary memory is divided into fixed-size pages that are automatically moved to and from page frames of real memory; the division is not logical and is usually invisible to the programmer. In segmentation, the

divisions (known as segments) are logical and of variable-sized units that are much larger than pages. Segments are generally much larger than pages: 16–24 KB versus 0.5–4 KB. Many machines combine both paging and segmentation. Since secondary memory is much larger than main memory, virtual memory presents the programmer with the view of a main memory that appears to be larger than it actually is. Virtual memory also facilitates automatic transfer of data, protection, accommodation of growing structures, efficient management of main-memory, and long-term storage.

virtual memory interrupt : virtual memory interrupt that occurs when an attempt is made to access an item of virtual memory that is not loaded into main memory.

virtual page number : virtual page number in a paged virtual memory system, this is the part of the memory addresses that points to the page that is accessed, while the rest of the address points to a particular part of that page.

virtual path : virtual path a concept used to describe the unidirectional transport of virtual channels that are associated by a common identifier value.

virtual reality : virtual reality three or more dimensionality of computer-generated images, which gives the user a sense of presence (i.e., a first-person experience) in the scene.

virtual register : virtual register one of a bank of registers used as general purpose registers to hold the results of speculative instruction execution until instruction completion. Virtual registers are used to prevent conflicts between instructions that would normally use the same registers. See also speculative execution.

Virtual Server: The part of a server that functions as if it were a separate, dedicated server. Each virtual server can run its own operating system and applications and even be networked with other virtual servers on the same machine. For instance, web hosting companies

Virtual Server: the shared server space by multiple website owners having all the administrator controls to him and other facilities like email accounts.

virtually addressed cache : virtually addressed cache a cache memory in which the placement of data is determined by virtual addresses rather than physical addresses. This scheme has the advantage of decreasing memory access times by avoiding virtual address translation for most accesses. The disadvantage is that data stored in the cache may have different virtual addresses in different processes (aliasing).

virus-assembled battery: It is a self contained, high-density electrical energy source created by a process in which biological versus assemble inorganic molecules into predetermined structure.

Visbreaking: A thermal cracking process in which heavy atmospheric or vacuum-still bottoms are cracked at moderate temperatures to increase production of distillate products and reduce viscosity of the distillation residues.

Viscosity Index : A measure of the viscosity temperature characteristics of a fluid as referred to that of two arbitrary reference fluids (ASTM Designation D2270 64).

Viscous: Thick - Resistant to flow. Applied to a liquid.

visible : visible associated with the wavelength region that can be seen by the human eye; often considered to range from about 400 to 700 nanometers.

visible light : visible light electromagnetic radiation in the visible portion of the spectrum, roughly 400 to 700 nanometers.

Visual aural radio range . : A type of radio range having four radio range legs, one pair of which is identified by visual, the other by aural indications at the mobile stations.

visual comfort probability (VCP) : visual comfort probability (VCP) this rating is based in terms of the percentage of people who will be expected to find the given lighting system acceptable when they are seated in most undesirable locations.

visual corona: Visible signs (usually a bluish glow) of the presence of corona, which occurs at a higher electric field than is necessary for the inception of corona.

visual display unit : visual display unit a common means of input/output to/from a computer. Consists of a CRT and a keyboard.

visual perception : visual perception the perception of a scene as observed by the human visual system: it may differ considerably from the actual intensity image because of the nonlinear response of the human visual system to light stimuli.

visual space : visual space the complete set of all possible images on a specific set of sampling and quantization parameters. Any specific image would be a member of this large space. For a 2 2 bi-level image, the space contains 16 members. Allowing all 3 3 bi-level images increases the size of the space to 512 (number of quantized levels raised to the power M, where M is the total number of pixels in the image).

Viterbi algorithm : Viterbi algorithm an algorithm for finding the most probable sequence given that data can be modeled by a finite-state Markov model. For example, used in maximum likelihood decoding of trellis codes and in equalization.

Vitrification: The incorporation of high-level wastes into borosilicate glass, to make up about 14% of it by mass. It is designed to immobilise radionuclides in an insoluble matrix ready for disposal.

vixel: (Vertical cavity surface emitting laser) type of a laser diode that emits light from its surface rather than its edge

VLCC: Very Large Crude Carrier

VLSI: Very large-scale integrated circuit.

VLSI very large scale integration: . (10,000 to 99,999 gates per chip)

Vlsi, very large-scale integration . : A term used to describe a multi-function semiconductor device with a very high density (up to 10,000 circuits) of electronic circuitry contained on a single silicon chip. (see table following lsi for comparison of circuit density ranges).

VM: Indicates a cable having two or more type V conductors twisted together under an outer fibrous covering.

Vmp: Voltage at maximum power

VMT: See Vehicle Miles Traveled

VOC: See Volatile Organic Compound

Voc: Open-circuit voltage

Vocoder. : A telecommunications device which will convert an analogue voice pattern to a digital pattern for further processing (eg encryption) and vice versa.

voice : voice means for enabling a computer or data processing system to recognize spoken commands and input data and convert them into electrical signals that can be used to cause the system to carry out these com-mands or accept the data.

Various types of algorithms and stored templates are used to achieve this recognition.

voice : voicing classification of a speech segment as being voiced (i.e., produced by glottal ex-citation), unvoiced (i.e., produced by turbu-lent air flow at a constriction), or some mix of those two.

voice activity : voice activity stimuli that can be used to optimize channel capacity. The human voice activity cycle is typically 35%. The rest of the time we are either listening or pausing. In a multiple access scenario such as CDMA, all users are sharing the same radio chan-nel. When users assigned to the channel are not talking, all other users on the same chan-nel benefit with less interference. Thus, the voice activity cycle reduces mutual interfer-ence by 65%, tripling the true channel capac-ity.

CDMA is not the only technology that takes advantage of this phenomenon.

Voice coil: It is the coil of wire attached to the apex of a loudspeaker.

voice coil : voice coil the bobbinless coil transducer element of a dynamic microphone.

Voice frequency. : The frequency of an acoustic oscillation which may be produced by the normal human voice.

Voice operated gain adjusting device (vogad). : This can be used before or after ssb modulation. Compresses signal which allows the main power to be increased thus improving the signal-to-noise ratio at the receiver.

Voice pabx, voice-only pabx. : A pabx for voice circuits; a telephone exchange.

voice/data pabx. : A device which combines the functions of a voice pabx and a data pabx, often with emphasis on the voice facilities.

Voice-grade channel, voice-grade line. : A channel or line that offers the minimum bandwidth suitable for voice frequencies, usually 300 bps to 3400 bps.

Voice-matched: It means that the separate speakers you choose have the same timber or tonal quality.

voicing : volatile pertaining to a memory or storage device that loses its storage capability when power is removed.

Void: A shrinkage cavity produced in casting during solidification.

Voip Systems: VoIP (Voice Over Internet Protocol) Systems transfer voice data over internet instead of regular phone lines for communication.

volatile : volt-ampere-reactive (VAR) a unit of power equal to the reactive power in a cir-cuit carrying a sinusoidal current when the product of the root-mean-square value of the voltage (expressed in volts), the root-mean-square value of the current (expressed in am-peres), and the cosine of the phase angle be-tween the voltage and the current, equals one; the unit of reactive power in the International System. Also expressed as megavars and kilovars.

volatile device : volatile device a memory or storage de-vice that loses its storage capability when power is removed.

Volatile matter: Those products, exclusive of moisture, given off by a material as gas or vapor. Volatile matter is determined by heating the coal to 950 degrees Centigrade under carefully controlled conditions and measuring the weight loss, excluding weight of moisture driven off at 105 degrees Centigrade.

volatile memory: Memory requiring electrical power to keep information stored.

volatile memory : volatile memory memory that loses its contents when the power supply is removed. Examples include most types of RAM.

Volatile organic compounds (VOCs): Organic compounds that participate in atmospheric photochemical reactions.

Volatile solids: A solid material that is readily decomposable at relatively low temperatures.

Volatile.: A term used to describe a data storage device (memory) that loses its contents when power is lost. Contrast with nonvolatile.

Volt: A unit of electromotive force. The electrical potential needed to produce one ampere of current with a resistance of one ohm.

Volt: It is the derived unit for electric potential or voltage. The term is taken from the name of the Italian physicist and inventor Alessandro Volta. It is denoted as V.

Volt: A unit of electromotive force.

Volt (V): The electrical potential difference between two points in a circuit. One volt is the potential needed to move one coulomb of charge between two points while using one joule of energy.

Volt (V): It is unit of electric potential, electric potential difference, electric motive force.

Volt (V): The unit by which an electromotive force or voltage is measured. Named for Alessandro Volta, the Italian physicist who invented the first electric battery (1800).

Volt (V): The volt is the International System of Units(SI) measure of electric potential or electromotive force. A potential of one volt appears across a resistance of one ohm when a current of one ampere flows through that resistance. Reduced to SI base units, $1 \text{ V} = 1 \text{ kg times m}^2 \text{ times s}^{-3} \text{ times A}^{-1}$ (kilogram meter squared per second cubed per ampere).

Volt (V): A unit of measure of the force, or 'push,' given the electrons in an electric circuit. One volt produces one ampere of current when acting on a resistance of one ohm.

Volt Amperes or Apparent Power: The product of the voltage across circuit and the current in the circuit.

volt(V): SI unit of electric potential. One volt is equal to the potential difference between two points of a conducting wire carrying a constant current of 1 A, when the power dissipated between these points is equal to 1 W.

Voltage: Amount of potential energy between two points on a circuit.

voltage: voltage the potential to do work, voltage is the ratio of the energy available to the charge, expressed in volts.

Voltage: The difference in electrical potential between any two conductors or between a conductor and ground. It is a measure of the electric energy per electron that electrons can acquire and/or give up as they move between the two conductors.

voltage: (see potential difference)

Voltage: The effective (rms) potential difference between any two conductors or between a conductor and ground. Voltages are expressed in nominal values unless otherwise indicated. The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The operating voltage of the system may vary above or below this value.

Voltage: A difference of potential measured in volts. The electric pressure available to cause a flow of electrons.

Voltage (V): Same as emf. The force or electrical pressure that has the potential to cause electron flow in a circuit.

voltage and current transmission matrix : voltage and current transmission matrix a matrix representation for a two port net-work that provides the voltages and current at one port as a function of the voltages and current at the other port. Also known as chain matrix.

Voltage at maximum power (Vmp): The voltage at which maximum power is available from a module.

voltage Band I: - Band I covers

voltage change : voltage change a deviation of the peak or RMS voltage between two levels that are of some fixed duration.

Voltage Class: The general strength of electrical insulation on a device, determining the maximum continuous voltage that can be applied between the conducting parts and ground potential, without damaging the insulation.

Voltage Class: The maximum continuous voltage that can be applied between the conducting parts and ground potential, without damaging the insulation.

voltage coefficient of resistance: voltage coefficient of resistance the change in resistance per unit change in volt-age, expressed as a percentage of the resis-tance at 10% of rated voltage.

voltage collapse: voltage collapse the rapid and uncontrol-lable drop of bus voltage due to a slight in-crease in load at the bus, generally charac-terized by inadequate reactive support in a high-load area.

voltage controlled oscillator : voltage controlled oscillator See voltage-controlled oscillator.

Voltage divider: A series circuit that divides voltage.

Voltage Divider : It is a simple circuit, which turns a large voltage into a smaller one.

Voltage Doubler: The circuit caring capacitors used to double the input voltage and transfer as the output voltage.

Voltage drop: The difference in potential between two points caused by current flow through a component.

Voltage Drop: The loss of voltage in a circuit when current flows.

Voltage Drop: The loss of voltage between the input to a device and the output from a device due to the internal impedance or resistance of the device. In all electrical systems, the conductors should be sized so that the voltage drop never exceeds 3% for power, heating, and lighting loads or combinations of these. Furthermore, the maximum total voltage drop for conductors for feeders and branch circuits combined should never exceed 5%.

Voltage Drop: The amount of voltage loss that occurs through all or part of a circuit due to impedance.

Voltage Drop: A term expressing the amount of voltage loss from original input in a conductor of given size and length.

voltage drop : voltage drop the difference in potential between the two ends of the resistor mea-sured in the direction of flow current. The voltage drop is $V = D IR$, where V is voltage across the resistor, I is the current through the resistor, and R is the resistance.

Voltage Drop : The amount of voltage loss that occurs through all or part of a circuit due to impedance.

voltage drop : The loss of voltage between the input to a device and the output from a device due to the internal impedance or resistance of the device.

voltage gain : voltage gain dimensionless ratio of the peak-to-peak RF output voltage versus the peak-to-peak RF input voltage.

Voltage Gradient: See "Voltage Drop"

Voltage Gradient: it is the potential difference per unit length its unit is volt/m .

voltage instability proximity index : voltage instability proximity index an index that gives an indication of the amount of real or reactive power margin available in the system before a voltage collapse occurs.

voltage interruption : voltage interruption the removal of the supply voltage from any phase, which is of momentary, sustained, of temporary dura-tion.

Voltage Meters: A Voltage Meter is a device that is used to measure voltage.

voltage multiplier : voltage multiplier an electronic device or circuit for multiplying the peak DC value of an input AC signal. A rectifying circuit that produces a direct voltage whose amplitude is approximately equal to a multiple of the peak amplitude

of the applied alternating voltage. Voltage doublers are commonly used in consumer electronic products that are designed for use in both U.S. and European markets.

voltage protection : voltage protection the output voltage is limited to protect the load from an over-voltage condition. This can be accomplished by shunting the power-supply output or shutting down the drive circuit for the active switches in a switching supply if the output voltage exceeds a preset value.

Voltage Rating: The normal voltage to be applied to an electrical device to provide for proper operation.

Voltage Rating: The maximum open circuit voltage in which a fuse can be used, yet safely interrupt an over current. Exceeding the voltage rating of a fuse impairs its ability to clear and overload or short circuit safely.

voltage rating : voltage rating the maximum voltage that may be applied to the resistor.

Voltage Ratio: The voltage ratio of a transformer is the ratio of the r.m.s. primary terminal voltage to the r.m.s. secondary current, under specified conditions of load.

Voltage reduction: Any intentional reduction of system voltage by 3 percent or greater for reasons of maintaining the continuity of service of the bulk electric power supply system.

voltage reference: It ideally produces a fixed voltage irrespective of the loading of the device and the passage of the time.

voltage reference : voltage reference a functional block that ideally provides a constant output voltage independent of external influences such as supply voltage, loading, or temperature. Commonly used voltage references are based on the bandgap voltage of silicon (bandgap reference) or the reverse breakdown of a zener diode.

voltage regulating relay : voltage regulating relay a voltage regulating relay senses RMS voltage level and issues commands to devices such as load tap changers, which then adjust the tap position to bring the voltage back to the desired level.

Voltage Regulation: The maintenance of a voltage level between two established set points, compensating for transformer and/or line voltage deviation, caused by load current. The voltage change is affected by the magnitude and the power factor of the load current.

Voltage Regulation: the system designed to measure the the input and output supply current. It measure and control the current.

voltage regulation : voltage regulation the change in delivered voltage from a generator or transformer from no-load to full-load. Voltage regulation is usually expressed as a percentage of the no-load voltage. For a DC generator, the voltage will always drop as the load increases and the voltage regulation will be a positive quantity. For AC generators and transformers, voltage regulation is the difference in the magnitude of the no-load and full-load voltages (ignoring phase angles). For capacitive (leading power factor) loads, the full-load voltage may have a higher magnitude than the

voltage regulator: Voltage regulators control the output voltage, eliminating voltage sags and swells in the input voltage that last from 15 milliseconds to one-half second. They are typically relatively inexpensive feedback controlled transformers and the more expensive ferroresonant transformer.

Voltage Regulator: the mechanism which is used to control or regulate to voltage supply in the circuit .these mechanisms may be electromechanical or electronic.

voltage regulator : voltage regulator similar to a voltage reference, but provides more output current at a less precisely controlled voltage. Primarily used to “clean up” (regulate) a varying input voltage to provide circuitry with a constant power supply voltage.

Voltage relay: One which functions at a predetermined value of voltage. A voltage relay may be either an over-voltage relay or an under-voltage relay.

Voltage Relays: A Voltage Relay is used to apply or remove voltage in an electric circuit. The relay is essentially a switch that is controlled via low power signal from a controller or other source.

Voltage Sag: Voltage Sags are momentary (typically a few milliseconds to a few seconds duration) undervoltage conditions and can be caused by a large load starting up (such as a air conditioning compressor or large motor load) or operation of utility protection equip

Voltage Sag: The short duration of time at which voltage dip due rapid overload or short circuit . It happens due to more starting requirement to the electrical machines.

voltage source: A source which essentially maintains the source voltage at a predefined value almost independent of the load conditions. In other words the terminal voltage is maintained close to the internal emf.

voltage source inverter : voltage source inverter a power converter that takes a DC voltage from a battery or the output of a rectifier and supplies a voltage of controllable and variable frequency and magnitude to a single or multiphase load. See also current source inverter.

Voltage Spike : Its effect is to produce a corresponding increase in current.

Voltage Spread: The difference between maximum and minimum voltages.

voltage spread : voltage spread the difference between a power system's specified maximum and minimum voltages.

voltage stability : voltage stability a measure of power system stability which considers the system's capacity to support a given load.

Voltage Standing Wave Ratio: The ratio of the maximum effective voltage to the minimum effective voltage measured along the length of a mismatched radio frequency transmission line.

Voltage Stress: The stress found within a material when subjected to an electrical charge.

Voltage Swells: Voltage Swells are momentary (typically a few milliseconds to a few seconds duration) overvoltage conditions which can be caused by such things as a sudden decrease in electrical load or a short circuit occurring on electrical conductors. Voltage swells

Voltage Swells: It is the time at which voltage in the circuit exceed due to less current requirement to machines. It is the opposite of voltage sag.

Voltage Transducer: A transducer used for the measurement of a.c. voltage.

Voltage Transducer: The element which measure the voltage and current level present in circuit to distribute.

voltage transfer function : voltage transfer function any function of input to output voltage in ratio form, expressed as a dimensionless ratio. The input voltage may be the source voltage or the in-put voltage, which differ due to mismatch. The output voltage may be the load voltage or maximum output voltage, which also dif-fer due to mismatch. Other voltages could also be ratioed, such as the input and output voltages of a MESFET. The voltage gain of a device is a specific case of a voltage trans-fer function. Regardless of the voltages used,

Voltage Transformer: The ratio of primary volts divided by secondary volts

voltage transformer : voltage transformer an instrument trans-former specially designed and optimized for voltage measurement and power metering applications. The primary winding is rated to match the system voltage and the sec-ondary is typically rated at a standard value to match common meters and display units. Also called a potential transformer.

Voltage Transformer Ratio: Transformer used to accurately scale ac voltages up or down, or to provide isolation.

Generally used to scale large primary or bus voltages to usable values for measuring purposes

Voltage Transients: A transient (sometimes called impulse) is an extremely fast disturbance (millionths of a second to a few milliseconds) evidenced by a sharp change in voltage. Transients can occur on your electric, phone, or even cable TV lines.

They can be caused by such

Voltage Transients: Transient Voltage is a change in the steady-state condition of voltage. In fact, transients vary widely in current and voltage wave shapes as well as magnitudes.

voltage unbalance : voltage unbalance refers to the greatest change of the polyphase voltages from the average polyphase voltage divided by the av-erage polyphase voltage.

voltage unit : voltage unit a protective unit (in protec-tive relaying) whose operation depends ex-clusively on the magnitude of voltage.

voltage variation — long duration: voltage variation — long duration a change of voltage RMS value from nominal for a time period greater than 1 minute, and can be used with the words showing a mag-nitude change such as overvoltage, or under-voltage.

voltage variation — long duration : voltage variation – short duration a change of the voltage RMS value from nom-inal for a time period from 0.5 cycles to 1 minute, and can be used with the words sag, swell, and interruption for magnitude changes, and the words instantaneous, mo-mentary, of temporary for showing duration.

Voltage Withstand Test: A field or factory test in which a conductor or electrical equipment is subjected to a higher than normal AC or DC voltage to test its insulation system.

voltage, nominal: Voltage by which an installation (or part of an installation) is designated. The following ranges of nominal voltage (rms values for a.c.) are defined

voltage, reduced: (see Reduced low voltage system).

voltage-behind-reactance model : voltage-behind-reactance model a rep-resentation of a machine in which the stator voltage equations are modeled as a voltage source in series with a reactance (and typi-cally a resistance). The voltage source repre-sents the back emf present on the stator wind-ings due to the coupling between the stator and rotor circuits. In synchronous machine modeling, several different voltage-behind-reactance models have historically been used, wherein approximations are used to represent the machine in various detail.

voltage-controlled bus : voltage-controlled bus in power-flow analysis of an electric power system, a bus at which the real power, voltage magnitude, and limits on reactive power are specified. A bus connected to a generator will be so rep-resented.

Volt-Ampere: measurement of power in a direct current also for alternating current for some cases. $P = VI$

voltampere (VA): The basic unit of Apparent power. The voltamperes of an electric circuit is the mathematical product of the volt and ampere of the circuit. The practical unit of Apparent power is kilovoltampere (kVA).

volt-ampere-reactive (VAR) : Volterra series a series expansion of a nonlinear function around a point. The Volterra series method is a generalization of the power-series method useful for analyz-ing harmonic and intermodulation distortion due to frequency-dependent nonlinearities in a device.

Voltmeter: Instrument used to measure voltage.

Voltmeter: An instrument used to measure voltage.

voltmeter: An instrument for measuring voltage.

Voltmeter: An instrument of high resistance for measuring differences of pressures in volts.

voltmeter : voltmeter an instrument for measuring a potential difference between different points of an electrical circuit. Units are volts.

volts/hertz control : volts/hertz control a method of speed control of induction machines, used below rated speed. When the volts/hertz ratio is kept constant, the current through the stator windings remains almost the same, except for very low speeds; hence, the available torque remains constant, but the speed changes due to change in frequency.

Volume: The size of a space or chamber in cubic units. Loosely applied to the output of a pump, in gallons per minute.

volume plasmon : volume plasmon a volume polariton in a plasma medium.

volume polariton : volume polariton a polariton that propagates in unbounded medium, also referred to as a bulk mode, wave by 180 degrees.

Volume Resistivity: The volume resistance between two electrodes of unit area and unit distance apart that are in contact with, or imbedded in, a specimen, is the ratio of the direct voltage applied to the electrodes to that portion of the current between them that is distributed through the volume of the specimen. Usually expressed in ohms/centimeter.

volume scattering : volume scattering the reflection of electromagnetic waves from a collection of particles or transitions in media properties distributed throughout a three-dimensional region. Particles may or may not be immersed or imbedded in a dielectric medium. See also surface scattering.

Volumetric Feeder: A Volumetric Feeder is a device for metering solid infeed by volume (as opposed to weight). While not as accurate as a scale, they are economical. They may use gravity, a screw feeder, or a pump for metering.

Voluntary Restraint Agreements (Vras): A compromise reached between the U.S. government and foreign steel exporting nations. Instead of the United States imposing punitive duties on subsidized steel imports, the foreigners would voluntarily limit their steel exports to the United States.

von Neumann, John : von Neumann, John (1903–1957) Born: Budapest, Hungary von Neumann is best known for his role in the development of the theory of stored program flexible computers. He is honored by the reference to von Neumann machines as a theoretical class of computers. von Neumann also invented the idea of game theory. As a mathematician, von Neumann published significant work on logic, the theory of rings, operators, and set theory. His work, The Mathematical Foundations of Quantum Mechanics, was significant in the mathematical justification of that field. von Neumann was a brilliant mathematician and physicist whose theoretical contributions are fundamental to modern physics and electrical engineering. He was the youngest member of the Institute of Advanced Studies at Princeton, and did important work on the Manhattan project.

Voss: Leveler on all three galvanizing lines; series of rolls that flatten the strip.

Voss Leveler: A set of rolls that flattens and stretches the strip into a flat shape.

voting circuit : voting circuit a circuit that provides fault-tolerance by comparing its inputs and taking a majority vote in case of disagreement.

vowel diagram : vowel diagram the articulation of different vowels is strongly based on the position of the tongue, which can be high/low and front/back. The diagram defined by these two dimensions is called vowel diagram.

voxel: voxel the 3-D analogue of a pixel; abbreviation of Volumetric Picture Element. Mathematically it is a point in 3-D space having integer coordinates; concretely, it can also be interpreted as a cube of unit size centered about that point. See pixel.

voxel adjacency : voxel adjacency one of three types of adjacency relations defined on voxels:1. 6-adjacency: two voxels are 6-adjacent if they differ by 1 in one coordinate, the other two coordinates being equal; equivalently, the two unit cubes centered about these voxels have one face in common.2. 18-adjacency: Two voxels are 18-adjacent if they differ by 1 in one or two coordinates, the remaining coordinates being equal; equivalently, the two unit cubes centered about these voxels have one face or one edge in common. 3. 26-adjacency: Two voxels are 26-adjacent if they differ by 1 in one, two, or three coordinates, the remaining coordinates being equal; equivalently, the two unit cubes centered about these voxels have one face, one edge, or one vertex in common. In these definitions, the numbers 6, 18, and 26 refer to the number of voxels that are adjacent to a given voxel. See pixel adjacency, voxel.

VPN: Virtual Private Network. A private network of computers that is partially connected by public phone lines.

VR Cable: AAC or ACSR with Vibration Resistant Twisted Pair Construction.

VRAM: Video random access memory and used to store the image.

VT: See "Potential Transformer".

Vtam, virtual telecommunications access method. : An IBM software routine; the virtual access method for 3270 systems.

Vulnerability. : A weakness or lack of controls that would allow or facilitate a threat actuation against a specific asset or target. (NATO)

VW-1: Vertical wire flame test, formerly designated as FR1.

VWSR: It is a measure of reflected power on transmission line.

W: See Watt

W: Heavy duty portable power cable, one to six conductors. 600V, without grounds.

W.U.C.: See "Western Underground Committee"

W/G: With ground

W/O/G: Without ground

WACOG: Weighted Average Cost of Gas

Wafer: A thin sheet of semiconductor (photovoltaic material) made by cutting it from a single crystal or ingot.

Wafer: A thin sheet of semiconductor material made by mechanically sawing it from a single-crystal or multi-crystal ingot or casting.

Wafer: the semiconductor materials used to fabricate the integrated circuits and solar cells or other materials in electronics. It may require number of processes.

wafer : wafer a thin slice of semiconductor material on which semiconductor devices are made. Also called a slice or

substrate.

Wafer Check Valves: Wafer Check Valves are also known as lift valves and are designed to permit fluid flow in only one direction. A thin disk is attached to allow to pivot on a hinge mounted to the top of the disk. When sufficient pressure is reached on the inlet side to overcome the back pressure on the valve, the wafer disk pivots up and fluid is allowed to pass.

Wafer Fab: Wafer fabrication. The process of electrical circuit to built into working one. It is repeated process of completion the circuit into stages.

wafer fab : wafer fab the facility (building) in which semiconductor devices are fabricated. Also called a semiconductor fabrication facility.

wafer scale integration : wafer scale integration most integrated circuits are cut from a large slice of material called a wafer. With wafer scale integration, the entire slice of material is used to create a complex circuit.

wafer sort: wafer sort a preliminary electrical test of each die while still on the wafer to eliminate most of the bad die before they are assembled.

Wafer Valve: A two way valve that may be opened or closed to block the flow of fluid in a passage. Normally manually operated, but may be automated, especially for larger sizes. Normally designed so that when open, the opening of the passage is only restricted by the thickness of the wafer. There will be some pressure loss.

wagner earthing : A null-balance method of keeping the arms of a bridge at earth potential without directly earthing any part of the bridge.

wait state : wait state a bus cycle during which a CPU waits for a response from a memory or input-output device.

Waiver (1). : When a security requirement has been set aside and need not be implemented at all. Security waivers are only to be granted by the naa if a compelling operational requirement exists. (ca).

Waiver (2). : A written authorisation to accept a configuration item, which during production or after having been submitted for inspection, is found to depart from specified requirements, but nevertheless is considered suitable for use 'as is' or after rework by an approved method.

Walk-in refrigeration units: Refrigeration/freezer units within a building that are large enough to walk into. They may be portable or permanent, such as a meat storage locker in a butcher store. Walk-in units may or may not have a door, plastic strips, or other flexible covers.

Walking Beam: A means of conveying steel bars, billets, slabs, etc., across a cooling bed or through a furnace. The material to be conveyed rests on a metal grid and a second grid is arranged to lift up and move forward between the stationary grid, thus lifting the material and walking it forward, before returning to make another stroke.

Walking Beam Furnace: A type of continuous reheat furnace in which the billet or slab moves through distinct heating zones within the furnace: By controlling the speed through the zones, steelmakers can achieve precise rolling temperatures and consume less fuel during operation.

wall clock : wall clock a device providing the time of day; contrast processor clock. Elapsed wall clock time for a process does not correspond with processor time because of time used in system functions.

Wall insulation: Insulating materials within or on the walls between heated areas of the building and unheated areas or the outside. The walls may separate air-conditioned areas from areas not air-conditioned.

Wall Plate: A plate designed to enclose a device box with or without a device installed in the box.

Wall socket: Any socket placed in a wall for the purpose of admitting a plug for making electrical connection with supply wires.

Wall Thickness: A term expressing the thickness of a layer of applied insulation or jacket.

Waloon Process: An early two hearth process for making wrought iron by refining cast iron. The conversion proper was carried out in a hearth furnace known as a finery; re heating for forging was carried out in a second hearth furnace known as a chafery.

Walsh cover : Walsh cover mutually orthogonal sequences used in direct-sequence code division multiple access, obtained from the rows of a Hadamard matrix. See also Hadamard matrix.

Walsh transform : Walsh transform See Walsh–Hadamard transform.

Walsh–Hadamard transform (WHT) : Walsh–Hadamard transform (WHT) a transform that uses a set of basis functions containing values that are either 1 or -1 , and are determined from the rows of the Hadamard matrices. This has a modest decorrelation capability and is simple to implement.

Waltz filtering : Waltz filtering also termed “Boolean constraint propagation”; a method of simplifying certain tree-search problems. It was originally developed to solve the computer vision problem of labeling each edge of a line drawing in order to give a 3-D description of the represented object.

WAN: WideArea Network. Composed of two or more localarea networks (LANs). Can be made up of interconnected smaller networks spread throughout a building, a state, or the entire globe.

Wan, wide-area network. : A network which uses common carrier-provided lines; contrast with lan.

WAPA: Western Area Power Administration

Ward–Leonard drive : Ward–Leonard drive an adjustable voltage control drive system for the speed control of DC machines, whereby variable voltage is supplied to the armature, while maintaining constant voltage across the shunt or separately excited fields. The variable voltage is obtained from a motor-generator set. The Ward–Leonard drive was frequently used in elevators.

warm start : warm start (1) reassumption, without loss, of some processes of the system from the point of detected fault.(2) the restart of a computer operating system without going through the power-on (cold) boot process.

Warm-air furnace: See Furnace.

Warning receiver. : A special type of intercept receiver having a primary function of alerting the user to imminent danger.

warning search radar. : See surveillance radar/warning search radar.

Warning, security. : A prosign or operating signal used to permit the transmission of unclassified or off-line encrypted messages over non-approved circuits/channels or to prevent the transmission of classified messages in plain language over non-approved circuits/channels. Notes: (1). The security warning prosigns are: uu - unclassified or off-line encrypted transmission; may be transmitted over non-approved circuits/channels. Hh - classified transmission; must be transmitted over approved circuits/channels only. (2). The relevant operating signals are contained in the acp 131 series.

Warpage: Deformation other than contraction that develops in a casting between solidification and room temperature; also, distortion occurring during annealing, stress relieving, and high temperature service.

Warranty contracts: Gas purchase agreements for the sale of natural gas by a producer to a pipeline company wherein the producer warrants it will have available sufficient gas supplies to meet its commitments over the life of the contract. Generally, the producer does not dedicate gas reserves underlying any specific acreage, lease, or fields to the agreement. Substitution of various sources of gas supply may be permitted according to the terms of the contract. Warranty contracts, by their terms, may vary from the above.

Wash: A casting defect resulting from erosion of sand by metal flowing over the mold or corded surfaces. They appear as rough spots and excess metal on the casting surface. Also call cuts.

Washburn Core: A thin core which constricts the riser at the point of attachment to the casting. The thin core heats quickly and promotes feeding of the casting. Riser removal cost is minimized.

Waste: See Biomass waste and Non-biomass waste.

Waste: Refers to radioactive wastes. High-level waste (HLW) is highly radioactive material arising from nuclear fission. It can be recovered from reprocessing spent fuel, though some countries regard spent fuel itself as HLW. It requires very careful handling, storage and disposal. Low-level waste (LLW) is mildly radioactive material usually disposed of by incineration and burial.

Waste coal: Usable material that is a byproduct of previous coal processing operations. Waste coal is usually composed of mixed coal, soil, and rock (mine waste). Most waste coal is burned as-is in unconventional fluidized-bed combustors. For some uses, waste coal may be partially cleaned by removing some extraneous noncombustible constituents. Examples of waste coal include fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste.

Waste energy: Municipal solid waste, landfill gas, methane, digester gas, liquid acetonitrile waste, tall oil, waste alcohol, medical waste, paper pellets, sludge waste, solid byproducts, tires, agricultural byproducts, closed loop biomass, fish oil, and straw used as fuel.

Waste Heat: The heat produced by the steel making process, which is used to heat the boilers and produce steam.

Waste heat boiler: A boiler that receives all or a substantial portion of its energy input from the combustible exhaust gases from a separate fuel-burning process.

Waste heat recovery: Process of collecting waste heat and using it to fill a desired purpose elsewhere.

Waste heat recovery: Any conservation system whereby some space heating or water heating is done by actively capturing byproduct heat that would otherwise be ejected into the environment. In commercial buildings, sources of water- heat recovery include refrigeration/air-conditioner compressors, manufacturing or other processes, data processing centers, lighting fixtures, ventilation exhaust air, and the occupants themselves. Not to be considered is the passive use of radiant heat from lighting, workers, motors, ovens, etc., when there are no special systems for collecting and redistributing heat.

Waste materials: Otherwise discarded combustible materials that, when burned, produce energy for such purposes as space heating and electric power generation. The size of the waste may be reduced by shredders, grinders, or hammermills. Noncombustible materials, if any, may be removed. The waste may be dried and then burned, either alone or in combination with fossil fuels.

Waste oils and tar: Petroleum-based materials that are worthless for any purpose other than fuel use.

Waste Water Pumps: Waste Water Pumps are used to pump waste water. They are designed for trouble-free pumping of sludge, suspended solids, and abrasives that may be present in the waste water.

Waste Water Storage Tanks: Waste Water Storage Tanks are used to hold waste water prior to treatment.

Waste Water Treatment Plant: A Waste Water Treatment Plant is a municipal or industrial facility that removes pollutants, sediment, and contaminants from waste water.

Waster Coil: A coil with a weight greater than 5000 lbs. that does not meet customer specifications and cannot be sold as a prime coil. These coils get an index number of 800011.

Wasters: Sheets that have prohibitive defects, for example, seams and buckled plates. Generally fit for re melting purposes only.

Wastewater, domestic and commercial: Wastewater (sewage) produced by domestic and commercial establishments.

Wastewater, industrial: Wastewater produced by industrial processes.

Watch Main Spring Steel: Usually supplied cold rolled and annealed in large widths and cut and hardened by the spring

manufacturers. Carbon content about 1.15 and Tungsten .17, extra precision rolled.

watchdog processor : watchdog processor a processor that observes some process and signals an alert if a certain event happens or fails to happen.

watchdog timer : watchdog timer a simple timer circuitry that keeps track of proper system functioning on the basis of time analysis. If the timer is not reset before it expires, a fault is signaled, e.g., with an interrupt.

Water Absorption Test: A method to determine the water absorbed through an insulating material after a given water immersion period.

Water Based: Aqueous) A coating in which the film forming ingredients are dissolved in or suspended in a volatile system containing water as the major solvent.

Water bed heater: An appliance that uses an electric resistance coil to maintain the temperature of the water in a water bed at a comfortable level.

Water conditions: The status of the water supply and associated water in pondage and reservoirs at hydroelectric plants.

Water Cooled Diesel Engines: A Water Cooled Diesel Engine uses water-based coolant circulating through water jackets to remove heat from the engine and a radiator to transfer the heat to the surrounding atmosphere. A well designed water cooling system is more efficient than an air cooled system, but also more costly.

water cooling: Method of removal of heat from components.

Water Desalination: Water Desalination is the process of removing salt from water for agriculture and to provide drinking water. There are many methods in use, including evaporation, distillation, and filtration techniques.

Water Elevated Tanks: Water Elevated Tanks, also known as water towers, are used as holding tanks for municipal or industrial water systems. The elevation provides pressurization for the water system.

Water Filter Housing: A Water Filter Housing is a housing that is designed to hold a filter as well as direct water flow through the filter. It has both water intake and outlet ports that are separated by the filter or filter media.

Water Filtration Systems: Water Filtration Systems remove pollutants and sediment from water via mechanical, chemical, and/or biological filtration methods.

Water Glass: The water glass is mounted to the water column and has a series of vertical buttons which change color from green to red to indicate the level of water in the column. Green represents water and red indicates steam. This allows for visual observation of the water level in the boiler at all times.

Water Glycol Fluid: A hydraulic fluid, that is comprised of a mix of distilled or other pure water and glycol, to form a fluid that has enough lubricity to function as a fluid power fluid; but is relatively fire resistant, i.e. will not support combustion.

Water Hardening: Process of hardening high carbon steels by quenching in water or brine, after heating.

Water heated in furnace: Some furnaces provide hot water as well as heat the home. The water is heated by a coil that is part of the furnace. There is no separate hot water tank.

Water heater: An automatically controlled, thermally insulated vessel designed for heating water and storing heated water at temperatures less than 180 degrees Fahrenheit.

Water heating DSM programs: These are demand-side management (DSM) programs designed to promote increased efficiency in water heating, including water heater insulation wraps.

Water heating equipment: Automatically controlled, thermal insulated equipment designed for heating and storing heated water at temperatures less than 180 degrees Fahrenheit for other than space heating purposes.

Water Lance: A pipe connected by a hose to a water supply. The lance is used to wash slag from the boiler tubes.

Water pollution abatement equipment: Equipment used to reduce or eliminate water borne pollutants, including chlorine, phosphates, acids, bases, hydrocarbons, sewage, and other pollutants. Examples of water pollution abatement structures and equipment include those used to treat thermal pollution; cooling, boiler, and cooling tower blowdown water; coal pile runoff; and fly ash waste water. Water pollution abatement excludes expenditures for treatment of water prior to use at the plant.

Water Pollution Control: Water Pollution Control is general term used to describe methods for removing and preventing the spread of pollutants in water systems.

Water pumping: Photovoltaic modules/cells used for pumping water for agricultural, land reclamation, commercial, and other similar applications where water pumping is the main use.

Water reservoir: A large inland body of water collected and stored above ground in a natural or artificial formation.

water resistivity : water resistivity a measure of the purity of cooling liquid for a power tube, typically measured in megohms per centimeter.

Water Softener : Water Softeners are used to remove dissolved minerals from water. Hard water is undesirable as it can leave mineral scale after evaporation. This can have adverse effects on heaters, filters, and other water processing equipment.

Water source heat pump: A type of (geothermal) heat pump that uses well (ground) or surface water as a heat source. Water has a more stable seasonal temperature than air thus making for a more efficient heat source.

Water Temperature Sensor: A Water Temperature Sensor is used to accurately monitor water temperature and may also be used to send enable/disable signals to heaters, chillers, or other devices when the temperature reaches a certain set point.

Water Treatment: Water Treatment is general term that describes the manipulation of incoming water to make it suitable for the intended purpose. This can include mechanical, chemical, and biological filtration; and also chemical treatment to alter basic chemistry (such as pH).

Water Treatment Chemicals: Water treatment chemicals are used in systems for water filtration, desalination, disinfection, or

treatment. Chemicals may be used to treat algae, reduce rust and scale build-up, balance the pH of the water, reduce foam, or to disinfect the water.

Water Treatment Plant: A Water Treatment Plant is a industrial or municipal facility for the purpose of removing pollutants, sediment, and biological contaminants from water so that it is potable.

Water Treatment Purification System: A Water Treatment Purification System is used to remove pollutants, suspended solids, and bacteria for water so it is potable. It may include a combination of physical, chemical, and biological filters.

water tree : water tree a microscopic cracking pattern which forms in the insulation of cables which are immersed in water or direct-buried in the earth. See tree.

Water turbine: A turbine that uses water pressure to rotate its blades; the primary types are the Pelton wheel, for high heads (pressure); the Francis turbine, for low to medium heads; and the Kaplan for a wide range of heads. Primarily used to power an electric generator.

Water vapor: Water in a vaporous form, especially when below boiling temperature and diffused (e.g., in the atmosphere).

Water well: A well drilled to (1) obtain a water supply to support drilling or plant operations, or (2) obtain a water supply to be used in connection with an improved recovery program.

Water wheel: A wheel that is designed to use the weight and/or force of moving water to turn it, primarily to operate machinery or grind grain.

Waterblocked Cable: A cable specially constructed with no internal voids in order to allow no longitudinal water passage under a given pressure.

watercourse : watercourse a line on a surface $f(x, y)$ which represents a watershed of the inverted surface $-f(x, y)$. The line of steepest descent from a saddle point to a minimum is a watercourse. Watercourses meet watersheds at saddle points.

Waterjet Cutting: Water Jet Cutting uses a directed jet of high pressure water, often mixed with abrasive particles, to cut materials. Waterjet can be used to cut nearly any material. It creates minimal heat in the workpiece, making it desirable for cutting temperature sensitive materials, and can also be used to cut very thick workpieces.

Waterproof Coatings: A Waterproof Coating is used to protect surfaces and structure from water and moisture. Common waterproof coatings include epoxies, shellacs, and polyurethanes paints.

Waterproof Enclosures: A Waterproof Enclosure is a structural case, often made of plastic or fiberglass, that is made to protect electronics and other water-sensitive components. They often incorporate gaskets, drip edges, and other design features to ensure performance.

watershed : watershed a line on a surface $f(x, y)$, typically an image, which divides it into "catchment areas." Within a catchment area, lines of descent all connect to the same minimum point. The line of steepest ascent from a saddle point to a maximum is a watershed. Watersheds often correspond to ridges.

Watertight: So constructed that water/moisture will not enter the enclosure under specified test conditions.

Waterway: A river, channel, canal, or other navigable body of water used for travel or transport.

Watson, Thomas J., Jr. : Watson, Thomas J., Jr. Watson is best known as the president of IBM who led the company into a dominant position in the computer industry. Watson took over his father's company, changed the structure, and moved the company away from the card tabulating business in which they held a dominant position. Watson Jr. oversaw the development of the IBM System/360 machines, which were to give the company a dominant position in computing.

Watson-Watt, Robert Alexander : Watson-Watt, Robert Alexander (1892– 1973) Born: Brechin, Angus, Great Britain Watson-Watt is most famous for his pioneering work in the development of radar. Watson-Watt's work is based on the principles elucidated by Faraday, Maxwell, and Hertz. A German physicist, Christian Hulsmeyer had filed a patent in 1904 for an earlier device. Lack of enthusiasm from the German government and the governments in France and the United States gave the English, who supported Watson-Watt, a clear edge in this field. Watson-Watt filed his patent application in 1919. His device proved invaluable to the Allies in World War II.

Watt: 1) With ac measurements, effective power (measured in Watts) equals the product of voltage, current, and power factor (the cosine of the phase angle between the current and the voltage). $Watts = EI \cos(\Theta)$. A Watt is a unit of power that considers both

Watt: One watt is defined as the energy consumption rate of one joule per second. $1W = 1J / 1s$. Or One watt is also defined as the current flow of one ampere with voltage of one volt. $1W = 1V \times 1A$

Watt: A unit of electrical power; the power of one ampere of current pushed by one volt of electromotive force.

watt : watt unit of power in the SI system of units.

Watt (W): Unit of power.

Watt (W): The unit of measurement for power. One watt equals to the work done when one joule is used per second. Named for James Watt the British engineer and inventor.

Watt (W): The unit of electrical power equal to one ampere under a pressure of one volt. A Watt is equal to 1/746 horse power.

Watt (W): The unit of electric power, or amount of work (J), done in a unit of time. One ampere of current flowing at a potential of one volt produces one watt of power.

Watt hour : It is a unit of energy equivalent to one watt.

Watt per steradian: Unit of radiant intensity.

watt(W): SI unit of power. One watt is equal to a power rate of one joule of work per second of time.

Watt, James : Watt, James (1736–1819) Born: Green-ock, Scotland, U.K. Watt is best known for his work in the development of efficient steam power. Watt began his career as an instrument maker. When asked to fix a troublesome Newcomen engine, he began to make improvements. Watt eventually partnered with industrialist Matthew Boulton to form a steam engine company. Watt is credited with having de-vised the horsepower system. The unit of power, the watt, is named in his honor.

Watt-Hour: 1) A unit of work equal to the power of one watt operating for one hour. 2) 3600 Joules.

Watt-Hour: a formal unit of energy equivalent to one watt (1 W) of power expended for one hour (1 h) of time.

Watthour (Wh): The electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour.

Watt-hour (Wh): It is a unit of energy equivalent to one watt.

Watt-hour (Wh): Unit of energy consumed at the rate of one watt (W) for a time of one hour. Equivalent to 3,600 joules.

Watt-hour (Wh): See 'Kilowatt-hour.'

wattmeter: wattmeter an instrument for measuring electric power in watts. A wattmeter re-quires connections to measure both the cur-rent through and the voltage across the load being measured.

Wattmeter: A device for measuring power consumption.

wattmeter: An instrument for measuring the average power.

watt-VAR meter : watt-VAR meter meter capable of si-multaneously measuring the real and reactive power delivered to an AC load.

Wave: Out of flat condition generally introduced during cold rolling of metal or alloy coils. Edge waves are more common and generally can be minimized by allowing for ?dropping a cut? during edge slitting. It is also possible to produce wavy edges during slitting.

wave equation : wave equation equation governing the evolution of a wave; in electromagnetics any of several equations or equation sets starting from the most general, nonlinear multivari-able differential Maxwell–Heaviside equa-tions and ranging down to the simplest first-order rate equations.

Wave Form : Form of a signal such as wave moving in a physical medium.

wave impedance : wave impedance the ratio of the trans-verse electric and magnetic fields inside a waveguide.

Wave Length: The distance, measured in the direction of propogation, of a repetitive electrical pulse or waveform between two successive points that are characterized by the same phase vibration.

Wave number: Number of complete wave cycles of an EM field that exist in one meter of linear space.

wave optics : wave optics formalism for optics in which the fields are represented as wave phenom-ena, in contrast to other ray or particle optics models.

wave plate : wave plate transparent anisotropic medium that introduces polarization-dependent phase shifts on an optical wave.

Wave polarization: Orientation of lines of electric flux in an EM field

wave polarization : wave polarization a description of the time-varying behavior of the electric field vector as some fixed point in space. Elliptical polarization is the most general polarization and special cases include linear and circular polarizations.

wave propagation : wave propagation the transfer of energy by electromagnetic radiation.

Wave trap. : A network used to reject certain signals and so to reduce interference with wanted signals in a receiving system.

wave winding : wave winding an armature winding on a DC machine in which the two ends of each coil are connected to bars on opposite sides of the commutator ring. The wave winding provides two parallel paths through the ar-mature winding, regardless of the number of poles in the machine.

waveform: The graphic representation of the variation of a quantity (such as voltage) as a function of some variable, usually time.

Waveform: The shape of the curve graphically representing the change in the ac signal voltage and current amplitude, with respect to time.

waveform coding : waveform coding refers to the class of signal compression methods that are based on a criterion where the input waveform is to be resembled as closely as possible ac-cording to some criterion, e.g., minimum squared error, by the reproduced coded ver-sion. Waveform coding contrasts parametric coding techniques.

waveform distortion : waveform distortion refers to a deviation from a steady-state clean sine waveform.

waveform interpolation coding : waveform interpolation coding para-metric speech coding method where a char-acteristic waveform, a prototype waveform, is extracted from the speech signal at regu-lar time instants and the intermediate signal is interpolated. Waveform interpolation coding is mostly used in low bit rate speech coding.

Wave-Form or Wave-Shape: The shape of the curve obtained when the instantaneous values of an alternating current are plotted against time in rectangular coordinates. The distance along the time axis corresponding to one complete cycle of values is usually taken as $2(\pi)$ radian, or 360 electrical degrees.

wavefront: portion of the wave from zero to peak value. Wavefront is sometimes defined as the extrapolated time based on 30% and 90% of peak value.

wavefront : wavefront front of a wave; often a surface of constant phase.

Waveguide: Structure that guides waves, such as EM or sound waves.

waveguide : waveguide a system of conductive or di-electric materials in which boundaries and related dimensions are defined such that electromagnetic waves propagate within the bounded region of the structure. Although most waveguides

utilize a hollow or dielectric filled conductive metal tube, a solid dielectric rod in which the dielectric constant of the rod is very much different from the dielectric constant of the surrounding medium can also be used to guide a wave. Waveguides rapidly attenuate energy at frequencies below the waveguide lower cut-off frequency, and are limited in bandwidth at the upper end of the frequency spectrum due to wave attenuation as well as undesired mode propagation.

waveguide interconnect : waveguide interconnect that uses a waveguide to connect a source to a detector. A waveguide is used for implementing a bus. The merits are large bandwidth, high speed of propagation, and compatibility with integrated optics and optoelectronics.

waveguide laser : waveguide laser a laser in which amplification occurs within a waveguide that is confining the laser modes in the transverse direction.

Waveguide : A transmission line consisting of a system of material boundaries or structures for guiding electromagnetic waves. Note. The most common form of waveguide is a metallic conductor; other forms are dielectric rod, or a mixed structure of conducting and dielectric materials.

wavelength: The distance over which wave shape repeats.

wavelength : wavelength a constant that describes the distance a periodic wave must travel in order to repeat itself. For example, if $v\lambda$; t is a periodic wave and if the wave travels a distance d , then $v\lambda C$; $t/D v\lambda$; t .

wavelength division multiplexing (WDM) : wavelength division multiplexing (WDM) a technique to increase capacity and throughput of systems by using a number of wavelength channels simultaneously.

Wavelength : The distance between two successive points of a periodic wave in the direction of propagation, in which the oscillation has the same phase.

wavelet: A wave like oscillation with amplitude that begins at zero, then gradually increases and then again decreases to zero.

wavelet : wavelet a basis function that is obtained by translating and dilating a mother wavelet; it has such properties as smoothness, time-frequency localization, orthogonality, and/or symmetry.

wavelet coding : wavelet coding coding a signal by coding the coefficients of the wavelet transform of the signal. The discrete wavelet transform is often used in image compression.

wavelet packet : wavelet packet a family of scaling functions and wavelets by translation and dilation of a mother wavelet and a scaling function following a binary tree structure.

wavelet shrinkage : wavelet shrinkage a non-parametric estimation method to remove noise from a signal by shrinking wavelet coefficients of a signal towards zero.

wavelet transform : wavelet transform a computational procedure that to represent a given function $x(t)$ by basis function $\psi(a(t-b)/c)$, calculates where a and b are real numbers. See also inverse wavelet transform.

wavenumber : wavenumber a constant that relates the spatial rate of change of phase for a propagating wave. The wavenumber is mathematically equal to $2\pi/\lambda$, where λ is the wavelength. SI units are radians per meter. See also phase constant.

Wavy: Not flat. A slight wave following the direction of rolling and beyond the standard limitation for flatness.

Wavy Edges: A term used to describe a quality defect in which the edge of the strip is wavy.

Wax: A solid or semi-solid material consisting of a mixture of hydrocarbons obtained or derived from petroleum fractions, or through a Fischer-Tropsch type process, in which the straight-chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point (ASTM D 938) between 100 and 200 degrees Fahrenheit and a maximum oil content (ASTM D 3235) of 50 weight percent.

weak localization: weak localization the name given to a process of self-interference of carriers in a mesoscopic system in which the transport is quasi-ballistic. A significant fraction of the carriers can be scattered by impurities back to their initial position in phase space, at which point they interfere with each other leading to an additional resistance. Since the scattering path can be traversed in either direction (which are time reversed paths of one another), it is said that the additional resistance is made up of continual interference between the two time-reversed paths. A small magnetic field breaks up this equivalence of the two paths and eliminates the weak localization contribution to the resistance.

weak localization of light : weak localization of light enhanced backscattering; sometimes also called opposition effect.

Wear: The undesired deterioration of a component by the removal of material from its surface.

Wear Pads: A wear pad is a hard wearing insert that is used as a sacrificial layer to protect structural components subject to surface abrasion.

Wear Resistant Epoxy Linings: Wear Resistant Epoxy Linings are a protective polymer coating that can be applied commonly via paint or powder coating methods and forms a hard impermeable barrier once cured.

Wear Resistant Rubber Sheetting: Wear Resistant Rubber Sheetting is used in industrial applications as both a liner, and also commonly as a belt conveyor. Special grades of rubber are formulated to be lightweight, flexible, and tough wearing and are especially useful for conveying abrasives, slurries, and ore.

Weather margin : A margin included in the uplink and/or down link budget of a satellite link to ensure adequate system performance under adverse propagation conditions.

Weather Seal Strip: A weather seal strip is an insulation device typically used to seal around doors and windows in a building. The weather seal is usually a piece of foam or plastic and is used to prevent the infiltration of air through the gap around the perimeter of the door or window.

Weather stripping or caulking: Any of several kinds of crack-filling material around any windows or doors to the outside used to reduce the passage of air and moisture around moveable parts of a door or window. Weather stripping is available in

strips or rolls of metal, vinyl, or foam rubber and can be applied on the inside or outside of a building.

Weatherproof: So constructed or protected that exposure to the weather will not interfere with successful operation.

Weatherproof: A device constructed or protected such that exposure to weather will not interfere with successful operation. (N.E.C.)

weber (Wb): SI unit of magnetic flux. One weber is equal to the magnetic flux which, linking a circuit of one turn, would produce in it an electromotive force of 1 V if it were reduced to zero at a uniform rate of 1 s.

Weber's law : Weber's law an experimental result that states that the smallest luminance increment $1L$ at which a region of luminance L is just discernible from a background of luminance L is such that the ratio $1L=L$ is constant. See also brightness constancy, simultaneous contrast.

Wedge Pulleys: A wedge pulley is one of the most commonly used pulleys in power transmission systems. The belt is designed with a trapezoidal (wedge) cross-section to overcome the alignment and belt slippage problems associated with other pulley designs. Under load, the belt will wedge deeper into the pulley groove, improving the transmission of the torque.

wedge ring detector : wedge ring detector a special photodetector structure consisting of wedge elements and annular half-ring shaped elements, each set covering a semicircle. This structure detects features without regard to scale with the wedges, and without regard to rotational orientation with the annuli.

Wedge Roll: A roll used to stabilize the plate as it enters the slitter knife area.

WEEE Directive: Waste electrical and electronic equipment (WEEE), to reduce the amount of WEEE that ends up in landfill.

Weigh Strip Weigh: A coating weight test.

Weighfeeders: A weighfeeder is a component of an industrial conveyor system used to measure the amount of material traveling through the conveyor system. The weighfeeder is responsible for measuring the amount of material, typically bulk materials, that are contained on the weigh belt at any given time. The weigh feeder provides the mass flow rate measurement for the system, allowing for process control and automation.

Weighing Controllers: A weighing controller is used in conjunction with a weigh belt or weighfeeder to provide visual feedback and system responses in a conveyor system. The weighing controller will use the input from the weighfeeder to control actions in the system such as adjusting speed control, stopping the belt, or providing system fault messages when problems are detected by the weigh system. A weighing controller may also be referred to as a weight indicator.

weight decay : weight decay a technique employed in network training that aims to reduce the number of interconnections in the final, trained network. This is achieved by penalizing the weights in some way such that they have a tendency to decay to zero unless their values are reinforced.

Weight Indicators: A weight indicator is a display device used to provide feedback in a weight measuring system, typically on industrial conveyors. When the weight indicator provides system feedback and control functions, it is also referred to as a weigh controller.

weight initialization : weight initialization the choosing of initial values for the weights in a neural network prior to training. Most commonly small random values are employed so as to avoid symmetries and saturated sigmoids.

weight sharing : weight sharing a scheme under which two or more weights in a network are constrained to maintain the same value throughout the training process.

weighted mean squared error (WMSE) : weighted mean squared error (WMSE) a generalization of the mean squared error.

weighted residual : weighted residual a different form of the moment method. See also moment method.

weighting filter : weighting filter a standardized filter used to impart predetermined characteristics to noise measurements in an audio system.

weightless network : weightless network networks that are trained, not by changing weight values, but by modifying the contents of a memory device, usually a RAM.

Weir: A dam in a waterway over which water flows and that serves to raise the water level or to direct or regulate flow.

Weirbrite Clear: A dried in place chromate treatment applied to Weirzin to provide a bright finish and excellent corrosion protection for non painted applications.

Weirchrome: (or tin free steel) Also Electrolytic Chromium Coated Sheets (ECCS) or TFS. Light gauge, low carbon, cold reduced steel on which chromium and oxides of chromium have been electrodeposited; primarily used for drawn applications, can ends and closures.

Weirite: Single reduced product.

Weirlite Mill: A cold reduction rolling mill which further reduces (20 to 45%) the gauge of steel that has already been reduced at the tandem mill and has been annealed. This mill is used to produce double reduced (DR) tin mill products at WSC.

Weirzin: Electrolytic zinc coated steel. Coating weights range from 0.025 oz./sq. ft to 0.20 oz./ sq/ ft. This can be given a variety of post treatments to enhance corrosion resistance and paintability.

Welch bound: Welch bound lower bound on the total squared cross correlation of a multi-set of sequences. For N complex-valued sequences s_i , $i = 1; 2; \dots; N$, each of energy s_i $s_i^* D L$,

Weld: A union made by welding.

Weld Bead: The built up portion of a fusion weld, formed either from the filler metal or the melting of the parent metal.

Weld Failure Analysis: Weld failure analysis is an engineering service that uses computational or experimental techniques to determine the reasons for the weld failure of a component. The weld failure analysis will determine if the failure is the result of

a faulty weld, or a stress or fatigue failure in the weld or adjoining materials.

Weld Ticket: A red or green ticket used to identify location of a weld in a coil. These tickets are placed in the sidewall of a coil while the coil is being produced.

Weldability: The feasibility of welding a particular metal or alloy. A number of factors affect weldability including chemistry, surface finish, heat treating tendencies, etc.

Welded Mesh: Welded mesh, also known as welded wire mesh, is produced by welding pieces of metal wire together to form a continuous piece of mesh material. Welded mesh is commonly used in construction and fencing. Because it is often used outside, welded mesh is commonly made of stainless steel or is dipped or coated in a protective material.

Welder Board: A U shaped wooden trough used to guide hand welder

Welder Box: Special electrical outlet receptacle to accommodate plug from hand welder. Located at several places throughout the line.

Welder Clamps: Devices used to hold the strip securely in place while a weld is being made.

Welder Protector: A fuse with special characteristics to meet heavy inrush current demands of an electric welder and protect the welder on short circuits.

Welding Electrode: A metal or alloy in rod or wire forms used in electric arc welding to maintain the arc and at the same time supply molten metal or alloy at the point where the weld is to be accomplished.

Welding Fabrication: Welding fabrication is a production process that uses welding to assemble components and produce a final part. The welding fabrication process uses a heat source to melt the adjoining workpieces and a filler material is added to the joint, mixing with the melted material, and finally hardening into the weld joint. There are many different kinds of welding, with the heat source being supplied by fire, electricity, and lasers, among others.

Welding Flash: Skin exposed too long to the ultraviolet rays of welding or melting arcs will burn as in a sunburn. Though temporary blindness can result, it is not permanent, as is popularly believed.

Welding Generators: A welding generator is a power supply generator unit used when electricity is not available for arc welding. The size of the generator needed is based on the welding application and the required power. For example, TIG welding and plasma welding usually required a minimum of 8 kilowatts from an AC generator.

Welding Inspection: Welding inspection is the process of visually or experimentally analyzing a weld joint to determine the weld quality and/or weld strength. In addition to visual inspection, weld test equipment can be used to test weld joints either destructively or non-destructively. See Weld Test Equipment.

Welding Machines: A welding machine is a piece of equipment used in the welding process to join two pieces of material together. A welding machine is usually a self-contained unit that includes all of the parts necessary to perform the welding process. As such, the welding machine may include a power supply, a heat source, and the welding torch that delivers the heat source. Welding machines may be small, portable units or larger, fixed units.

Welding Monitor: A welding monitor is a component in a welding machine or a welding process used to monitor and control the weld process. Depending on the type of welding being done, the monitor may allow for control of voltage/power, gas flow, temperature, length of the weld and other parameters.

Welding Rod: A rolled, extruded or cast round filler metal for use in joining by welding.

Welding Shielded Arc: Electric arc welding in which the molten weld metal is protected from the atmosphere. An inert gaseous atmosphere or fluxcoated electrode may be employed.

Welding Sockets: A welding socket is a connector, such as a 'T', 'Y', cap, or inline connector, used to provide a welded connection in pipes and tubes. A welding socket is used in place of butt welding (end-to-end) to provide more surface area and thereby reducing the amount of heat and time required to complete the weld connection.

Welding Stress: That stress resulting from localized heating and cooling of metal during welding.

Well: A hole drilled in the earth for the purpose of

Well Level: The amount of water that is in the pump hole. It is measured in feet.

Well water for cooling: A means of cooling that uses water from a well drilled specifically for that purpose. The subterranean temperature of the water stays at a relatively constant temperature. Where water is abundant, it provides a means of getting 55-degree Fahrenheit water with no mechanical cooling. Used usually for heat rejection in a water source heat pump.

Wellhead: The point at which the crude (and/or natural gas) exits the ground. Following historical precedent, the volume and price for crude oil production are labeled as "wellhead," even though the cost and volume are now generally measured at the lease boundary. In the context of domestic crude price data, the term "wellhead" is the generic term used to reference the production site or lease property.

Wellhead price: The value at the mouth of the well. In general, the wellhead price is considered to be the sales price obtainable from a third party in an arm's length transaction. Posted prices, requested prices, or prices as defined by lease agreements, contracts, or tax regulations should be used where applicable.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota;

West South Central: Arkansas, Louisiana, Oklahoma, and Texas;

West Texas Intermediate (WTI - Cushing): A crude stream produced in Texas and southern Oklahoma which serves as a reference or "marker" for pricing a number of other crude streams and which is traded in the domestic spot market at Cushing,

Oklahoma.

West Virginia, Northern: . All mines in the following counties (formerly defined as Coal-Producing Districts 1, 3,) Barbour, Brooke, Braxton, Calhoun, Doddridge, Gilmer, Grant, Hancock, Harrison, Jackson, Lewis, Marion, Marshall, Mineral, Monongalia, Ohio, Pleasants, Preston, Randolph, Ritchie, Roane, Taylor, Tucker, Tyler, Upshur, Webster, Wetzell, Wirt, and Wood.

West Virginia, Southern: . All mines in the following counties (formerly Defined as Coal-Producing Districts 7) Boone, Cabell, Clay, Fayette, Greenbrier, Kanawha, Lincoln, Logan, Mason, McDowell, Mercer, Mingo, Nicholas, Pocahontas, Putnam, Raleigh, Summers, Wayne, and Wyoming.

Western: Anchorage, AK, Nogales, AZ, Los Angeles, CA, San Diego, CA, San Francisco, CA, Honolulu, HI, Great Falls, MT, Portland, OR, Seattle, WA.

Western Region: Consists of the Northern Rocky, Southern Rocky, West Coast Coal Basins and Western Interior. The following comprise the Western Region Alaska, Arizona, Arkansas, California, Colorado, Idaho, Iowa, Kansas, Louisiana, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Oregon, Texas, South Dakota, Utah, Washington, and Wyoming.

Western Region.: Consists of Alaska, Arizona, Colorado, Montana, New Mexico, North Dakota, Utah, Washington, and Wyoming.

Western Underground Committee: A committee of western based electric utility engineers that provides a forum for establishment of guides that provide options, recommendations and practices for its members. These guides are used to assist its members in preparing their own specificatio

Wet bottom boiler: Slag tanks are installed usually at the furnace throat to contain and remove molten ash.

wet etching : wet etching a process that uses liquid chemical reactions with unprotected regions of a wafer to remove specific layers of the substrate.

Wet Film Thickness: Wet film thickness can be measured using the PFund Gauge. A spherical section of glass is pressed into the wet coating. The diameter of the spot is measured in mm and wet film thickness correlated to dry film thickness.

Wet Location; Cover Open: A cover, UL listed in accordance with specific test standards for use in wet and damp locations with the cover opened (plug cap inserted) or closed.

Wet Location; Only with Cover Closed: A cover UL listed in accordance with specific test standards for use in damp locations with the cover closed, or wet locations only when cover is closed.

Wet natural gas: A mixture of hydrocarbon compounds and small quantities of various non hydrocarbons existing in the gaseous phase or in solution with crude oil in porous rock formations at reservoir conditions. The principal hydrocarbons normally contained in the mixture are methane, ethane, propane, butane, and pentane. Typical nonhydrocarbon gases that may be present in reservoir natural gas are water vapor, carbon dioxide, hydrogen sulfide, nitrogen and trace amounts of helium. Under reservoir conditions, natural gas and its associated liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil and are not distinguishable at the time as separate substances. Note The Securities and Exchange Commission and the Financial Accounting Standards Board refer to this product as .

Wet Scrubber (Gas Washer): In air pollution control, a liquid (usually water) spray device for collecting pollutants in escaping foundry gases.

Wettability Test: The degree to which a metal that has passed through a die forming a hollow profile (shape), separated and not completely rejoined. Flare testing is a method of evaluating weld integrity.

Wetting: A phenomenon involving a solid and a liquid in such intimate contact that the adhesive force between the two phases is greater than the cohesive force within the liquid. Thus a solid that is wetted, on being removed from the liquid bath, will have a thin continuous layer of liquid adhering to it. Foreign substances such as grease may prevent wetting. Addition agents, such as detergents, may induce wetting by lowering the surface tension of the liquid.

Wetting: The ability of a material to absorb moisture.

Wetting Agent: A surface active agent that produces wetting by decreasing the cohesion within the liquid.

Wh: See Watthour

wheastone bridge : A four arm resistance bridge where the balance is obtained by null deflection when the ratio of the adjacent arms are equal.

Wheatstone Bridge: It is to measure the unknown impedance.

Wheatstone Bridge: An instrument or a circuit consisting of four resistors or their equivalent in a series-parallel arrangement, used to determine the value of an unknown resistance when the other three resistances are known.

Wheel Bearings: A wheel bearing is a mechanical component used to transfer load from one rotating component to another. Wheel bearings are typically designed to allow for the transfer or rotating motion while restricting linear motion. There are many different types of wheel bearings, depending on the application and the load range.

Wheel Clamps: A wheel clamp is a mechanism used to lock a wheel in place, thus preventing it and the vehicle it's attached to from moving. Wheel clamps may be used as security devices to prevent others from stealing a vehicle, or as a punitive device such as in the case of locking illegally parked cars.

Wheel Excavators: A wheel excavator is a construction machine used for excavating rock and soil and then loading the material into trucks or moving it to other locations. The wheel term refers to the use of a wheels and tires instead of tracks for moving the equipment around. The boom, or arm of the machine is usually capable of fitting various attachments to the end in order to accomplish specific jobs such as digging, breaking, or scooping.

Wheeling charge: An amount charged by one electrical system to transmit the energy of, and for, another system or systems.

Wheeling service: The movement of electricity from one system to another over transmission facilities of interconnecting systems. Wheeling service contracts can be established between two or more systems.

whetstone: whetstone the speed of a processor as measured by the Whetstone benchmark.

Whetstone benchmark : Whetstone benchmark a benchmark test program for scientific computers originally written in Fortran at Whetstone Laboratories, England.

whip antenna: It is an antenna consisting of single straight flexible wire or rod.

whisker contact diode : whisker contact diode a technique for mounting very high frequency diodes in a waveguide that involves a thin pointed wire or whisker that acts as both an antenna into the guide and as a bias contact.

Whiskers: Thin hair like growths on metal that are barely visible to the naked eye, they are stronger than the metals from which they are formed, probably because they are free from defects.

White Annealing: A heat treatment process carried out on pickled steel with the objective of eliminating the hydrogen that has entered the steel during the pickling operation thus removing any tendency to hydrogen embrittlement.

White Iron: A cast that is essentially free of graphite and most of the carbon content is present as separate grains of hard Fe₃C. white iron exhibits a white, crystalline fracture surface because fracture occurs along the iron carbide platelets.

White noise: it is a random signal with constant power spectral density.

white noise : white noise the noise that in its spectrum contains constant energy per unit bandwidth independent of frequency. See also thermal noise.

White Rust: A coating metal oxide, such as zinc oxide, which develops when the oxygen in the atmosphere mixes with the coating material (such as galvanized coating). See Sacrificial Barrier.

White space device: It is an FCC-certified wireless device that can be used without an exclusive broadcast license in the RF spectrum below 700 MHz.

White space device (WSD): It is an FCC-certified wireless device that can be used without an exclusive broadcast license in the RF spectrum below 700 MHz.

White spirit: A highly refined distillate with a boiling point range of about 150 degrees to 200 degrees Centigrade. It is used as a paint solvent and for dry-cleaning purposes.

White Ticket: Ticket used to identify coil. The white ticket contains the coil IPM number, and is placed in the sidewall of the coil.

whitening filter : whitening filter a filter that whitens noise, i.e., one that brings noise whose power spectrum is not white into this condition, e.g., by means of a frequency dependent filter. Noise whitening is a vital precursor to matched filtering.

Whole-house cooling fan: A mechanical/electrical device used to pull air out of an interior space; usually located in the highest location of a building, in the ceiling, and venting to the attic or directly to the outside.

wholesale bulk power : Very large electric sales for resale from generation sources to wholesale market participants and electricity marketers and brokers.

Wholesale competition: A system whereby a distributor of power would have the option to buy its power from a variety of power producers, and the power producers would be able to compete to sell their power to a variety of distribution companies.

wholesale competition : A system whereby a distributor of power would have the option to buy its power from a variety of power producers, and the power producers would be able to compete to sell their power to a variety of distribution companies.

Wholesale electric power market: The purchase and sale of electricity from generators to resellers (retailers), along with the ancillary services needed to maintain reliability and power quality at the transmission level.

Wholesale power market: The purchase and sale of electricity from generators to resellers (who sell to retail customers), along with the ancillary services needed to maintain reliability and power quality at the transmission level.

wholesale power market : The purchase and sale of electricity from generators to resellers (who sell to retail consumers) along with the ancillary services needed to maintain reliability and power quality at the transmission level.

Wholesale price: The rack sales price charged for No. 2 heating oil; that is, the price charged customers who purchase No. 2 heating oil free-on-board at a supplier's terminal and provide their own transportation for the product.

Wholesale sales: Energy supplied to other electric utilities, cooperatives, municipals, and Federal and state electric agencies for resale to ultimate consumers.

Wholesale transmission services: The transmission of electric energy sold, or to be sold, in the wholesale electric power market.

Wholesale wheeling: An arrangement in which electricity is transmitted from a generator to a utility through the transmission facilities of an intervening system.

Wi: Withheld to avoid disclosure of individual company data.

Wicking: The longitudinal flow of a liquid in a wire or cable construction due to capillary action.

wide band: wide band property of a tuner, amplifier, or other device that can pass a broad range of frequencies.

wide band FM : wide band FM frequency modulation scheme where the ratio of peak frequency deviation to the frequency of modulating signal is larger than 0.2.

Wide Flange Beam: A structural steel section on which the flanges are not tapered, but have equal thickness from the tip to the web and are at right angles to the web. Wide flange beams are differentiated by the width of the web, which can range from 3 inches to more than 40 inches, and by the weight of the beam, measured in pounds per foot.

wide sense stationary uncorrelated scattering (WSSUS) channel : wide sense stationary uncorrelated scattering (WSSUS) channel a randomly time-variant channel whose first- and second-order statistics (means and correlation functions) are independent of time and frequency. The frequency independence translates into the uncorrelated scattering requirement. In a WSSUS multipath channel, the random process pertaining to a signal caused by any resolvable scatterer (reflector) is: 1. wide sense stationary, i.e., its mean and correlation functions are independent of time, and 2. uncorrelated with any other scatterer's contribution.

wide-area network (WAN) : wide-area network (WAN) a computer communication network spanning a broad geographic area, such as a state or country.

Wideband: Transmission medium or channel having a wider bandwidth than one voice channel

Wideband. : See broadband.

wide-sense stationary process: wide-sense stationary process a stochastic process $x(t)$ for which the mean $m(t) = D m D$ constant and the covariance $C(t_1; t_2)$ is a function of only $t_1 - t_2$. In this case, we write $C(t_1; t_2) = D C T /$ where $T D t_1 - t_2$.

Widmanstätten Structure: A structure characterized by a geometric pattern resulting from the formation of a new phase on certain crystallographic planes in the parent phase. The orientation of the lattice in the new phase is related crystallographically to the orientation of the lattice in the parent phase.

Width Variation: Product whose width fluctuates above and below the customer's finished width tolerance.

Widths: The lateral dimension of rolled steel, as opposed to the length or the gauge (thickness). If width of the steel strip is not controlled during rolling, the edges must be trimmed.

Wien bridge : Wien bridge a bridge circuit where one arm is a series connection of a resistor and capacitor, another arm is a parallel connection of a resistor and capacitor (these two arms are called reactance arms), and two other arms (called ratio arms) are resistors. The balance detector is connected between the common point of ratio arms and the common point of reactance arms, a sinusoidal voltage source is connected to another bridge diagonal. The Wien bridge was initially designed as a frequency measuring circuit; now the main part of its application is the Wien bridge oscillator.

Wien bridge oscillator : Wien bridge oscillator (1) an oscillator where the Wien bridge is used in the amplifier feedback. The frequently used circuit includes equal resistors and equal capacitors in reactance branches of the bridge; this arrangement provides easy continuous tuning of the oscillation frequency. Tuning of the bridge providing high indirect frequency stability of oscillations is easily combined with application of an operational amplifier as oscillator active element. The circuit of amplitude control is also easily attached. All these advantages provide wide spread of Wien bridge oscillators in high and low radio frequency ranges of applications. (2) a form of feedback oscillator that uses a noninverting amplifier along with a feedback path that produces a phase shift of zero degrees at the operating frequency. The feedback network contains only two reactive elements of the same type.

Wiener filter: Wiener filter filter that attempts to reduce signal noise by separating and suppressing the power spectrum of the noise from the power spectrum of the signal. The uncertainty in the estimation of the noise power spectrum will cause the signal to be smoothed. Also known as the least-mean square filter.

Wiener, Norbert (1894-1964) : Wiener, Norbert (1894-1964) mathematician whose contributions include Brownian motion, stochastic processes, generalized functions, harmonic analysis, control theory, and optimal filtering. Established the field of cybernetics, author of "Cybernetics: or Control and Communication in the Animal and the Machine."

Wi-Fi: Wireless Fidelity. WiFi originally referred to the 802.11b specification for wireless LANs, but it is now used to describe any of the 802.11 wireless networking specifications.

Wi-Fi: wireless local area network or a system which allows the electronic system to connect wireless to transfer data.

Wild Steel: Steel which has not been completely deoxidized and reacts violently after casting due to liberation of gases of cooling.

Wilkinson coupler : Wilkinson coupler a coupler that splits a signal into a number of equiphase and equiamplitude parts. It provides isolation between output terminals by connecting resistors between each output terminal and a common junction. A coaxial type coupler was first proposed by Dr. Wilkinson. In recent years, not only coaxial type but also MIC (microwave integrated circuit) type Wilkinson couplers are practically used for various kinds of microwave circuits.

Williams tube memory : Williams tube memory a memory device based on electric charges being stored on the screen of a cathode ray tube. Now obsolete.

Wilson central terminal : Wilson central terminal reference point for forming most of the standard ECG leads. It is the average of the right arm, the left arm, and the left potentials. It is a time-varying reference.

WiMax: Worldwide Interoperability for Microwave Access. Wireless communications standard which provide 30 to 40 megabit-per-second data rates.

Winch Drive: (Clutch) A hydraulic piston that applies pressure to clutch plates to obtain the required motor amperage, controlling loop tension on the winch drive.

Winch Gear Units: A winch is a mechanical device used to reel in or let out a rope or cable, while maintaining tension in the line. In a winch gear unit, the winch is driven by a gear set designed to convert the high speed power produced by the winch motor into a low speed, high torque force. Winch gear units can be designed with planetary, worm, or spur gear units.

Winches: A winch is a mechanical device used to reel in or let out a rope or cable, while maintaining tension in the line. Winches can be mechanically controlled by a motor and drive train or manually controlled with a hand crank.

Winchester disk : Winchester disk a type of magnetic disk for data storage. Its characteristic property is that the disk and the

read-write head are placed in a hermetically sealed box. This allows higher recording density as the read-write head can be moved closer to the disk surface. See also disk head.

Wind Box: The box type structure of the boiler, located on the burner deck that contains the fuel supply manifolds, burners and air registers. Combustion air is delivered to the windbox where it is distributed by means of the air registers to all four burners.

Wind energy: Kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.

Wind energy conversion system (WECS) or device: An apparatus for converting the energy available in the wind to mechanical energy that can be used to power machinery (grain mills, water pumps) and to operate an electrical generator.

wind energy conversion : A process that uses energy from the wind and converts it into mechanical energy and then electricity.

Wind farm: It is a group of wind turbines in the same location used to produce electricity.

Wind farm: See Wind power plant.

wind farm : wind farm a plot of land on which several power-generating windmills are placed.

Wind power: It is extracted from air flow using wind turbines to produce mechanical or electric power.

wind power generator : wind power generator a system that utilizes the energy in the wind to generate electricity. The energy in the wind drives a wind turbine which acts as the prime mover for the generator. A wind turbine operates at a variable speed, and an appropriate electric machine and controller converts the mechanical energy into electrical energy and pumps it into a utility grid.

Wind power plant: A group of wind turbines interconnected to a common utility system through a system of transformers, distribution lines, and (usually) one substation. Operation, control, and maintenance functions are often centralized through a network of computerized monitoring systems, supplemented by visual inspection. This is a term commonly used in the United States. In Europe, it is called a generating station.

Wind turbine: That converts kinetic energy from wind into electrical power.

Wind turbine: Wind energy conversion device that produces electricity; typically three blades rotating about a horizontal axis and positioned up-wind of the supporting tower.

wind-electric conversion : wind-electric conversion the process by which wind (mechanical) energy is converted to electrical energy, usually by the use of wind turbine.

winding : winding a conductive path, usually wire, inductively coupled to a magnetic core or cell.

winding factor : winding factor a design parameter for electric machines that is the product of the pitch factor and the distribution factor.

Window: A wide band gap material chosen for its transparency to light. Generally used as the top layer of a photovoltaic device, the window allows almost all of the light to reach the semiconductor layers beneath.

window : window any appropriate function that multiplies the data with the intent to minimize the distortions of the Fourier spectra.

window operation : window operation an image processing operation in which the new value assigned to a given pixel depends on all the pixels within a window centered at that pixel location.

Window. : A world war ii code name for confusion reflector devices. The primary types of reflectors designated "window" are "chaff", "rope" and "corner reflector". Today window and chaff are generally used synonymously within nato. Note. Not used within the rn/usn/cn. See chaff.

windowing : windowing the process of opening a window. In signal processing, it is common to open only a certain restricted portion of the available data for processing at any one time: such a portion is called a window or sometimes a mask or neighborhood. For instance, in FIR filter design, a technique known as windowing is used for truncation in order to design an FIR filter. The design of window becomes crucial in the design. In image processing, it is a common practice that a square window of (for example) 3 3 pixels is opened centered at a pixel under consideration. In this window operation, the gray level of the pixel is replaced by a function of its original gray level and the gray levels of other pixels in the window. Different functions represent different operations: in particular, they will be suitable for different filtering or shape analysis tasks. See also median filter , thinning.

Windscale incident : Windscale incident a nuclear power plant accident at the Windscale plant in Great Britain.

Windscreen: It is the front window of the car, bus, motorbike, tram or an aircraft.

winner-take-all network : winner-take-all network a network in which learning is competitive in some sense; for each input a particular neuron is declared the "winner" and allowed to adjust its weights. After learning, for any given input, only one neuron turns on.

Winston concentrator: A trough-type parabolic collector with one-axis tracking, developed by Roland Winston.

wipe system : wipe system in television, a system that allows the fading in of one channel of video as a second channel of video is faded out without loss of sync.

wiped joint: wiped joint a fused joint used in splicing lead-sheathed cables.

Wiper Ring: A rubber or other synthetic seal that is fitted around a moving shaft to form a low pressure seal. Normally used to prevent fluid from entering the sealed volume.

Wire: A chemical compound used to reduce pulling tension by lubricating a cable when pulled into a duct or conduit.

Wire: Wire is the insulated or bare conductor used to transfer the current into circuits.

Wire: (1) A single piece of slender, flexible metal ranging in approximate size from a piece that is difficult to bend by hand to a fine thread. (2) Several wires as in (1) twisted together. (3) Wires as in (1) or (2) insulated.

Wire EDM: Wire EDM is short for Wire Electrical Discharge Machining (EDM) and is an electro-chemical production process used to cut high-strength metals and alloys. In the Wire EDM process, a voltage is passed through a thin-wire electrode and the resulting series of rapid electrical discharges (sparks) erode, or cut through, the material. The material to be cut must be electrically conductive and the process uses either a steady stream or a circulating bath of non-conductive fluid (de-ionized water) to flush away the small amounts of material cut away during the process. Production process used to cut high-strength metals and alloys. In the Wire EDM process, a voltage is passed through a thin-wire electrode and the resulting series of rapid electrical discharges (sparks) erode, or cut through, the material. The material to be cut must be electrically conductive and the process uses either a steady stream or a circulating bath of non-conductive fluid (de-ionized water) to flush away the small amounts of material cut away during the process.

Wire Ferrules: A ferrule is a type of fastener often used to create a loop from materials such as rope or wire. The ferrule is a tube-like fastener through which one or more strands of the material are passed through. A tool such as a pliers or other crimping device is then used to crimp the ferrule down around the material until it is tight enough to restrict movement through the ferrule.

Wire Gauge: it is a measurement of how large a wire is, either in diameter or in cross-sectional area.

Wire Lubricant: A strand or group of strands of electrically conductive material, normally copper or aluminum.

Wire Mesh: Wire mesh is a product resulting from the combination of wire strands into a net-like structure. Wire mesh can be fabricated with many different metals, different thickness, and with varying mesh densities. The mesh can be woven, welded, or manufactured by punching or cutting holes into a solid sheet of material.

Wire Mesh Grip: (Flexcor) Woven wire mesh holding devices used to support, pull, or relieve strain exerted upon cables, conduit, tubing and various other items.

Wire Rope Winch: A winch designed to reel or let out wire rope around the spindle of the winch. See definition of Winch.

Wire speed: It refers to the rate of data transfer.

Wire : Wire is a single, usually cylindrical, flexible strand or rod of metal.

wire/line communication. : See communication, line/wire.

wired OR : wired OR a circuit that performs an OR operation by the interconnection of gate out-puts without using an explicit gate device. An open collector bus performs a wired OR function on active-low signals.

wireframe : wireframe (1) 3-D object representation containing only edge and vertex information. It may produce ambiguous images (e.g., the Necker cube).(2) a model that approximately represents a solid object by using several hundreds of triangles. It is used in applications such as facial coding, facial recognition and industrial component mensuration.

Wireless: The communication system having no wire connections between two or more devices. Like Radio or mobile phones.

Wireless Access Control Systems: Access control systems define the wide range of security solutions used to provide an individual or corporate authority access control over its facilities and/or computer systems. Access control systems can be small home security systems or large corporate-wide computer systems. Access is granted via an electronic key, or passcode, or a combination of hardware and software keys. A wireless access control system utilizes wireless communication devices and protocols to allow for the remote operation of the access control system.

Wireless Bridging: A networking bridge is used to connect two or more separate networks. A wireless bridge functions similar to a wireless network but can be used in situations in which running a cable would be impractical or expensive.

Wireless Bridging: Bridging mode allows two or more wireless access points (APs) to communicate with each for the purpose of joining multiple LANs.

Wireless charging: It is one of the several methods of charging batteries without the use of cable.

Wireless Communications: Wireless communications refers to the transmission of signals through the air rather than through a wired connection. Wireless communications are transferred by energy signals such as infrared, radio frequency, laser/light, or acoustic transmissions.

Wireless energy transfer: Transmission of electric power from a power source to consuming devices without use of solid wires

Wireless inductive charging: It is one of the several methods of charging batteries without the use of cable.

wireless local area network (WLAN) : wireless local area network (WLAN) a computer network that allows the transfer of data without wired connections.

wireless local loop : wireless local loop a wireless connection (using a radio link) between a subscriber terminal (for example, a telephone) and the local exchange of the public switched network.

Wireless Power Platform: Wireless power for continuous charging.

Wireless radio charging: It is a method to use to charge items with small batteries and with lower power consumption.

Wireless resonance charging: It is one of the several methods of charging batteries without the use of cable.

Wireless Sensor: the sensor having wireless operation used to sense different conditions like temperature and pressure or any network.

Wires charge: A broad term referring to fees levied on power suppliers or their customers for the use of the transmission or distribution wires.

Wiring Closet: Termination point for Customer premises wiring offering access to service personnel.

Wiring diagram: It is a pictorial representation of electric circuit.

Wiring diagram: A graphic representation of how circuit components are connected.

wiring system : An assembly made up of cable or busbars and parts which secure and, if necessary, enclose the cable or busbars.

Wirth's Law: This law states that in complexity computer software slows down faster than hardware speeds up.

Withstand Rating: The maximum current that an unprotected electrical component can sustain for a specified period of time without the occurrence of extensive damage.

withstand rating : withstand rating the maximum voltage that electrical equipment can safely with-stand, without failure, under specified test conditions.

withstand test : withstand test a test of an insulator's ability to withstand a high voltage of some specified waveform.

Wizard Control: Control used to set auto valves at specific points.

WLAN: Wireless Local Area Network. A wirelessly connected Local Area Network (See LAN).

WMSE : WMSE See weighted mean squared error.

Wolfram: The alternative name for tungsten

Wood conversion to Btu: Converting cords of wood into a Btu equivalent is an imprecise procedure. The number of cords each household reports having burned is in exact, even with the more precise drawings provided, because the estimate requires the respondent to add up the use of wood over a 12-month period during which wood may have been added to the supply as well as removed. Besides errors of memory inherent in this task, the estimates are subject to problems in definition and perception of what a cord is. The nominal cord as delivered to a suburban residential buyer may differ from the dimensions of the standard cord. This difference is possible because wood is most often cut in lengths that are longer than what makes a third of a cord(16 inches) and shorter than what makes a half cord (24 inches).

Wood Doors: A wood door is barrier constructed from wood and used to open and close access through an opening by swinging or sliding the door.

Wood energy: Wood and wood products used as fuel, including round wood (cord wood), limb wood, wood chips, bark, saw dust, forest residues, charcoal, pulp waste, and spent pulping liquor.

Wood pellets: Saw dust compressed into uniform diameter pellets to be burned in a heating stove.

Wood Working Machinery: Wood working machinery includes a wide array of power equipment designed to cut and shape wood. Wood working machinery includes different types of saws, planers, routers, lathes, and many other specialized tools.

Wooding. : Undesirable obstruction (i.e. By the ship's superstructure) in the path of a steerable antenna onboard ship.

Woody Fracture: A fracture that is fibrous or woody in appearance due to the elongation of the individual grains. This may be accentuated by the presence of slag or by a banded structure. It is grey and dull and is characteristic of ductile but non homogeneous material such as wrought iron

Woofers: It is a informal term for loudspeaker driver designed to produce low frequency sounds, typically around from 40hz up to 1khz or higher.

Wootz: A carbon steel containing 1 to 1.6% C produced by melting a bloomery iron or an inhomogeneous steel with charcoal in a crucible. The process originated in India as early as the 3rd century A.D.

Word: Standard number of bits that a processor or memory manipulates at one time. Microprocessors typically use 8, 16, or 32-bit words.

word: A group of bits representing a complete piece of digital information.

word parallel : word parallel processing of multiple words in the same clock cycle.

Word. : In computing this is a unit of data, being a set of digits which are treated as a single unit. Typically it is 8 or 16 bits. Large computers may have words of different lengths depending on their function, e.g. Data or instructions.

wordspotting : wordspotting detection or location of keywords in the context of fluent speech.

Work: The transfer of power from one state to another. The movement of weight over a specified distance.

work (B-ISDN) : work (B-ISDN) a generic term that generally refers to the future network infrastructure that will provide ubiquitous availability of integrated voice, data, imagery, and video services.

Work Area Outlet: A connecting device in the work area where horizontal cable terminates and work area equipment can be connected. Also called information outlet and telecommunications outlet.

work flow management : work flow management the process to monitor work progress through any number of departments.

Work function: The energy difference between the Fermi level and vacuum zero. The minimum amount of energy it takes to remove an electron from a substance into the vacuum.

work function : work function amount of energy necessary to take out an electron from a material.

Work Hardening: Increase in resistance to deformation (i.e. in hardness) produced by cold working. Same as strain hardening

Work Plane: The plane at which work is usually done and on which the luminance is specified and measured. Unless otherwise indicated, this is assumed to be a horizontal plane 30" above the floor.

Work Plane: in 2D coordinates the infinite plane on which user is working or drawing curves or sketch.

Work Roll Balance: Cylinders that supply the force used to hold the work rolls up in place.

Work Rolls: Two, smaller, rolls of a four high stand of the Weirite Mills, Tandem Mills, and the Temper Mills. These rolls, through the use of hydraulic pressure, are responsible (along with the backup rolls) for the shape of the steel.

Workability: The characteristic or group of characteristics that determines the ease of forming a metal into desired shapes.

Working gas: The quantity of natural gas in the reservoir that is in addition to the cushion or base gas. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any season. Volumes of working gas are reported in thousand cubic feet at standard temperature and pressure.

Working gas capacity: The amount of total natural gas storage capacity that can be used to store natural gas available for withdrawal.

Working interest: An interest in a mineral property that entitles the owner of that interest to all or a share of the mineral production from the property, usually subject to a royalty. A working interest permits the owner to explore, develop, and operate the property. The working-interest owner bears the costs of exploration, development, and operation of the property and, in return, is entitled to a share of the mineral production from the property or to a share of the proceeds therefrom. It may be assigned to another party in whole or in part, or it may be divided into other special property interests.

Working Near: Refers to working near live parts. Any activity inside a limited approach boundary.

Working On: Refers to working on live parts. Coming in contact with live parts with the hands, feet, or other body parts, with tools, probes, or test equipment, regardless of the personal protective equipment a person is using.

working set : working set the collection of pages, w ; T /, referenced by a process during the time interval $t - T$; t /.

Working storage capacity: The difference in volume between the maximum safe fill capacity and the quantity below which pump suction is ineffective (bottoms).

working-set policy : working-set policy a memory allocation strategy that regulates the amount of main memory per process, so that the process is guaranteed a minimum level of processing efficiency.

Workstation: The location where telecommunications cabling is connected to work area equipment (PCs and peripherals) by means of a telecommunications outlet. Also called work area outlet and information outlet.

workstation : workstation a computer system designed for engineering design calculations, characterized by (comparatively) large main memory, high floating point computational speed, and a high resolution graphic display system. It is used primarily in engineering and scientific applications.

World cover.: Total world-wide coverage (ie a minimum of 3 geosynchronous satellites are required for world cover). Note that this is distinct from earth cover.

world modeling : world modeling describes the geometric and physical properties of the object (including the robot) and represents the state of the assembly of objects in the workspace. World modeling makes it possible to implement many of the features of a task-level programming system. See also object-oriented programming.

Worm Gear Limit Switches: A worm gear limit switch is typically used in actuators or industrial machinery where the rotary motion of the machine is linked to the linear motion of another part. The limit switch is then used to trigger an event when the linear motion reaches a predetermined limit.

Worm Gear Screwjacks: A screwjack is a mechanical device used to lift heavy objects. In a worm gear screwjack, the jacking action is controlled by a gear or screw that sits perpendicular to the jacking screw.

Worm Gear Sets: A worm gear set contains a screw-like driving gear, called the worm, and a mating spur gear that is used to drive a rotating piece of equipment. A worm gear set is capable of generating high torque with a low turning speed, producing a very high gear ratios.

Worm Gear Speed Reducer: A worm gear set contains a screw-like driving gear, called the worm, and a mating spur gear that is used to drive a rotating piece of equipment. A worm gear set is capable of generating high torque with a low turning speed, producing a very high gear ratios. As a result, worm gear speed reducers are a very effective way to reduce shaft RPM from the input to the output of the gear set.

Worm Winch: A worm winch is a winch controlled by a worm gear unit in which the driving gear, the worm, is a screw-like gear turning a spur gear. Worm winches typically have a very high reliability, however at a much lower efficiency than planetary or spur gear winches. Worm winches operate at an efficiency of about 35 to 40%.

worst-case design : worst-case design a family of control design algorithms in which parameter perturbations and/or disturbances are estimated to behave in the most unfavorable way from control objective point of view. This assumption leads usually to various min-max control algorithms based on static min-max, nonco-operative game theory or H infinity design. Since the worst-case estimates are conservative, the resulting controllers, although robust, may be in some sense too pessimistic. See also robust controller design.

wound rotor: Rotor of an induction motor provided with a three-phase winding in the rotor.

wound rotor induction motor : wound rotor induction motor an induction motor in which the secondary circuit consists of a polyphase winding or coils connected through a suitable circuit. When provided with slip rings, the term slip-ring induction motor is used.

Woven Mesh: Woven mesh is a product resulting from the combination of wire strands, woven into a net-like structure. Woven mesh can be fabricated with many different metals, different wire thicknesses, and with varying mesh densities.

WP: Weatherproof construction, two or three impregnated cotton braids. 80°C

WPA: WiFi Protected Access. WPA is a security specification for the 802.11 standards replacing the less effective WEP. It uses 802.1x and EAP to restrict network access, and it uses its own encryption called Temporal Key Integrity Protocol (TKIP) to secure the

WPAN: Wireless Personal Area Network. WPAN is a PAN that uses wireless means of connecting, however since all PAN technologies, such as Bluetooth, are wireless, you can consider the terms synonymous.

wraparound : wraparound (1) a phenomenon in signal processing that occurs in the discrete case when signals are not properly manipulated. For instance, in circular convolution, if the length of signals is not properly chosen, i.e. there are not sufficient zeros appended at the end of the signals, the so-called wraparound error will take place, that is, the contributions from different periods will overlap. (2) the returning to a zero state when a register or pointer at its maximum value is incremented or one at its minimum value is decremented. (3) a condition code or indicator that may be set, or a program segment that is executed when a register wraps around.

wraps : wraps pre-formed wire grips or ties for mechanically joining overhead conductors to insulators.

Wratten filter : Wratten filter a light filter for separating colors. It is available in transparent sheets of various colors and is useful in photography and in several phases of electronics, including the operation of color meters and color matchers.

Wringer Rolls: A set of rubber rolls that removes water or solution from the plate.

Wrinkling: A coating defect consisting of the formation of small ridges or folds in the coating which resemble the surface of a prune, but are usually smaller in size.

wrist : wrist for a manipulator, refers to the joints in the kinematic linkage between the arm and hand (or end-effector). Usually, wrist allows an orienting the manipulator. Therefore, the main role of the wrist is to change the orientation of the hand (or end-effector). See also spherical wrist.

writable DVD: It is a DVD technology that allows a user to write data one or more times to DVD with the pc DVD driver.

write: The process of storing information in a memory.

write allocate: write allocate part of a write policy that stipulates that if a copy of data being updated is not found in one level of the memory hierarchy, space for a copy of the updated data will be allocated in that level. Most frequently used in conjunction with a write-back policy.

write broadcast : write broadcast a protocol for maintaining cache coherence in multiprocessor systems. Each time a shared block in one cache is updated, the modification is broadcast to all other caches. Also referred to as write update.

write buffer : write buffer a buffer that stores memory write requests from a CPU. The write request in the buffer are then served by the memory system as soon as possible. Reduces the number of processor wait cycles due to long latency write operations.

write instruction : write instruction a processor instruction that stores information into memory from a processor register or a higher level cache.

write invalidate : write invalidate a protocol for maintaining cache coherence in multiprocessor systems. Each time a shared block in one cache is updated, a message is sent that invalidates (removes) copies of the same block in other cache memories. This is a more common alternative than write broadcast protocols.

write once read many (WORM) : write once read many (WORM) used to refer for memory devices that allow data to be written once after device fabrication, and to be read any number of times. A typical example is PROM.

write policy : write policy determines when copies of data are updated in a memory hierarchy. The two most common write policies are write through and write back (copy back).

Write Protect: the system or mechanism which do not allow to make changes into the data. Data may be in the form of software audio and video form.

write through : write through a write policy that stipulates that when a copy of data is updated at one level of a memory hierarchy, the same data are also updated in the next outer level. Write through is usually only used in low-level caches. Its advantages are that it is fast and simple to implement, and that it always guarantees that the next level of the memory hierarchy has a valid copy of all data. Its main disadvantage is that it generates much data traffic to the next level.

written-pole motor : written-pole motor a single-phase motor that uses a coil to write poles on the magnetic rotor. The advantage of the written-pole motor is that it draws much lower starting current, allowing much larger single-phase motors. The development of this motor has been sponsored by the Electric Power Research Institute.

Wronskian : Wronskian matrix whose determinant is used to test the linear independence of solutions to differential equations (such as Maxwell's equations).

Wrought Iron: An iron produced by direct reduction of ore or by refining molten cast iron under conditions where a pasty mass of solid iron with included slag is produced. The iron has a low carbon content.

Wrought Product: A product that has been subjected to mechanical working by such process as rolling, extruding, forging, etc.

WSAN: wireless sensor and actor network

WSSUS channel : WSSUS channel See wide sense stationary uncorrelated scattering channel.

WTI: West Texas Intermediate

W-Type: Same as Y type except having three cord connectors arranged in the form of the letter W.

WUC: See "Western Underground Committee".

Wustite: The oxide of iron of lowest valence which exist over a wide range of compositions they do not quite include the stoichiometric composition FeO.

Wye: A three phase, four wire electrical configuration where each of the individual phases is connected to a common point, the "center" of the Y. This common point normally is connected to an electrical ground.

wye connection : [see star connection]

wye-connection : wye-connection a three phase source or load connected in the form of Y.

wye-delta starter : wye-delta starter a motor starter that starts a three-phase AC motor in wye or star configuration so that the motor starts on approximately 58% of normal voltage, with a two-thirds reduction in starting current. As the motor approaches operating speed, the windings are reconfigured in delta configuration so that full voltage is applied for normal operation. The transition from star to delta is performed with the help of timer settings and contactors.

wye-delta transformer : wye-delta transformer a connection of a three-phase transformer with one primary and one secondary which can be considered as three similar single-phase transformers. The primary is connected in wye, that is one terminal from each phase is connected to neutral and one to a line voltage. The secondary is connected in delta, with each phase connected between two line voltages.

wye-wye transformer : wye-wye transformer a three-phase transformer with both the primary and secondary coils connected in wye. This connection is considered undesirable, due to the triple harmonics in the exciting current. To maintain balance load voltages under varying loads, it is necessary to solidly connect the primary and secondary neutrals to ground. This may allow some secondary current to flow on the primary neutral and may also cause interference with parallel communication lines.

wye-wye-delta transformer : wye-wye-delta transformer a three-phase transformer in which the primary and secondary coils are connected in wye. In order to overcome the problems with the wye-wye connection, a set of tertiary coils are connected in delta to provide a path for the triple harmonic components of the exciting current to circulate.

Wzn: Weir zinc product from the #1 Plater.

X: Reactance expressed in Ohms.

X: Two FX wires twisted together, color coded. 125V, 60°C.

X Ray Gauge Recorder: Equipment used to produce a gauge chart that records thickness measurements.

X Ray Gauge Unit: Equipment used to measure thickness of steel. The unit is positioned across the width of the strip on the entry end of the line.

X Rays: Form of radiant energy with wavelength shorter than that of visible light and with the ability to penetrate materials that absorb or reflect ordinary light. X rays are usually produced by bombarding a metallic target with electrons in a high vacuum. In nuclear reactions it is customary to refer to photons originating in the nucleus as gamma rays and to those originating in the extranuclear part of the atom as x rays.

X.25 (1980), x.25 (1984) : The variants of x.25 agreed by ccitt at its plenary meetings in 1980 and 1984, respectively. See ccitt recommendations.

X.400 : The international telecommunications union - telecommunications standardisation sector (itu-t) series of message handling service recommendations for the interchange of text or mixed-media messages.

X.435 : Is designed to support electronic data interchange (edi) messaging.

X.500 : An iso and itu standard that defines how global directory services should be structured.

X.509 : An itu recommendation that gives the definitive reference for designing applications related to public key infrastructures.

x86-64: It is a 64-bit processing technology and it enables advantages such as a increased memory space and processing more data clock cycle

X-band : The range of frequencies extending from 5.20ghz to 10.90ghz.

Xenon: It is a chemical element having symbol Xe and atomic number 54

xerox : The originator of ethernet.

XHHW: High temperature (90°C) chemically cross-linked polyethylene jacketed small diameter building wire.

XHHW-2: An XLPE insulated, moisture resistant conductor designed for use in wet or dry locations and an operating temperature of up to 90 degrees Celsius.

XLP: See "XLPE"

XLP: Cross-linked polyethylene.

XLPE: CrossLinked Polyethylene. A thermo set plastic compound that is used for insulation of wire and cable.

Xmodem: A protocol for transferring files during direct dialup communications. Developed by Ward Christensen in 1977, Xmodem does error checking to ensure that information is not lost or corrupted during transfer of 128 byte blocks. Since its development it has

Xmodem: Xmodem allowed users to transmit files between their computers when both sides used MODEM

XNOR: In this gate, output will be high when both of the inputs will be identical.

Xns/itp, xerox network systems' internet transport protocol : (in lan technology) a special communications protocol used between networks. Xns/itp functions at the 3rd and 4th layer of the osi model. Similar to tcp/ip.

Xon, xoff : Control characters used for flow control.

XOR: It is a gate in which output is low when both of the inputs will be identical, and if not identical then output will be high

XOR gate: XOR gate a logic gate that performs the exclusive-OR function. Exclusive OR is defined for two inputs as one or the other being true but not both.

X-ray : X-ray short wavelength electromagnetic radiation; often considered to range from about 0.1 to 100 Å.

X-ray image : X-ray image a digital image whose pixels represent intensities of x-rays. The x-rays may come from artificial sources (medical images) or arise naturally (astronomy). Also important in modern inspection systems. See also imaging

modalities, medical imaging.

X-ray lithography : X-ray lithography lithography using light of a wavelength in the range of about 0.1 to 5 nm, with about 1 nm being the most common, usually taking the form of proximity printing.

x-rays: An electromagnetic radiation produced when the inner satellite electrons of heavy atoms have been excited by collision with a stream of fast electrons return to their ground state, giving up the energy previously imparted to them. Electromagnetic radiations of the same type as light, but of much shorter wave-length, in the range of 5 nm to 6 nm produced when cathode rays strike a material object.

XT: Two FXT wires twisted together, color coded. 125V, 60°C

x-y plot : A graphic representation of the relationship of the X signal, which controls the horizontal position of the beam in time, and the Y signal, which controls the vertical position of the beam in time.

Xylene (C: 6432)Colorless liquid of the aromatic group of hydrocarbons made the catalytic reforming of certain naphthenic petroleum fractions. Used as high-octane motor and aviation gasoline blending agents, solvents, chemical intermediates. Isomers are metaxylene, orthoxylene, paraxylene.

Y: See "Wye".

Y connection : Y connection a three-phase source or load which is connected such that the elements are connected in parallel and are thus represented in a schematic diagram in a Y or star-shaped configuration.

Yag Laser Marker: A YAG Laser Marker is a marking system that uses a diode-pumped solid state laser. Yttrium Aluminum Garnet (YAG) is a common crystal used in DPSS systems as the lasing medium and is often doped with neodymium. For additional information, see Diode-Pumped Laser Marker.

Yagi antenna: yagi antenna and yagi uda array both have same meaning .i.e. It is a directional antenna consisting of multiple parallel dipole elements in a line

Yagi Uda array: It is a directional antenna consisting of multiple parallel dipole elements in a line.

Yagi-Uda array: Yagi-Uda array a wire antenna array consisting of three key components:1. a dipole antenna (roughly a half wave-length in length) that connects the antenna to a source or load, 2. a reflector element (slightly longer than the dipole antenna), which is a wire that is placed behind, but not connected to, the dipole antenna, and3. director elements (slightly shorter than the dipole antenna), which are wires that are placed in front of, but not connected to, the dipole antenna. The Yagi-Uda array is commonly used in the reception of television signals.

Yarways: A measuring instrument used to monitor the water level of drums.

Y-bus : Y-bus a matrix which contains the admittance of each element in an electric power system.

Yellow Brass: 65% copper and 35% zinc. Also known as High Brass. A copper zinc alloy, named for its yellow hue. Formerly a very popular alloy, but now largely replaced by Cartridge Brass.

Yellowcake: A natural uranium concentrate that takes its name from its color and texture. Yellowcake typically contains 70 to 90 percent U₃O₈ (uranium oxide) by weight. It is used as feedstock for uranium fuel enrichment and fuel pellet fabrication.

Yellowcake: Ammonium diuranate, the penultimate uranium compound in U₃O₈ production, but the form in which mine product was sold until about 1970. See also Uranium oxide concentrate.

Yellowing: A coating defect consisting of a physical change of a coating in which the color of the cured coating gets yellower as it ages, or after rebaking.

Yield: The ratio of the quantity of finished shipments to the total raw steel produced, adjusted for changes in inventory and any slabs that are purchased from outside. Yield has significantly improved during the past decade, primarily as the result of the industry's conversion to continually cast steel, whose yield is superior to that of traditional ingot teeming. Tons of finished steel products, divided by total tons of charged steel, as a percentage

yield : yield percentage of acceptably good chips to the total chips considered at a certain level of a MMIC process. High yield is one of the most important parameters of a cost-efficient process. DC yield refers to the percentage of chips that behave appropriately to the application of DC biasing voltages and currents (See also bias voltage or current). RF yield refers the percentage of chips that properly process RF/microwave signals.

Yield Point: The first stress in a material less than the maximum obtainable stress at which an increase in strain occurs without an increase in stress. Also known as upper yield stress.

Yield Point Elongation: Corresponds to a region of non homogeneous deformation when a sample is subjected to tensile testing.

Yield Ratio: The ratio of yield strength to ultimate tensile strength.

Yield Strength: The stress at which a material exhibits a specified limiting deviation from the proportionality of stress to strain. The deviation is expressed in terms of strain. Also known as proof stress.

Yield Strength: The force required to stretch a material.

Yield Strength: The minimum stress at which a material will start to physically deform without further increase in load.

YIG resonator : YIG resonator See yttrium iron garnet resonator.

YIQ : YIQ the standard format used in U.S. color television. In this standard the image is coded as; Y (luminance), I (phase) and Q (quadrature phase) can be calculated from RGB values as follows: Y D 0:30R C 0:59G C 0:11B, I D 0:28G C 0:59R -0:32B and Q D -0:53G C 0:21R C 0:31B.

yocto (y): Decimal sub-multiple prefix corresponding to 10⁻²⁴

yotta (Y) : Decimal multiple prefix corresponding to 10²⁴

Young's Modulus: the coefficient of elasticity of stretching. For a stretched wire, Young's Modulus is the ratio of the stretching force per unit cross sectional area to the elongation per unit length. The values of Young's Modulus for metals are of the order 10(12) dynes per square cm. See Modulus of Elasticity

Young's modulus: Elastic modulus applied to a stretched wire or to a rod under tension or compression. The ratio of the stress to the strain.

yttrium aluminum garnet (YAG) : yttrium aluminum garnet (YAG) host material for rare-earth ions, such as neodymium, used for laser systems. Basis for important laser media when doped with appropriate ions, especially neodymium; output frequencies mostly in the near infrared. Also written YAIG.

yttrium iron garnet (YIG): yttrium iron garnet (YIG) a ferrite often used in microwave devices. This material (Y₃Fe₅O₁₂) has a complicated cubic crystal structure with eight formula units per cell. The five Fe ions per formula unit are distributed between antiparallel sublattices, giving the material its ferrimagnetic structure.

yttrium iron garnet filter : yttrium iron garnet filter a tunable filter employing externally biased YIG and operating near its ferrimagnetic resonance.

yttrium iron garnet resonator : yttrium iron garnet resonator a tunable resonator employing externally biased YIG and operating near its ferrimagnetic resonance.

Y-Type: An adapter in the form of a letter Y having two cord connectors on one end and a male plug on the other end.

Z: Impedance

Z: Symbol for impedance

Z Mill: The full name for z mill is Sendzimir mill. A Z mill operates with a very small diameter work roll, normally about 2 inches, backed up by a number of rolls in a pyramid shaped stack. This roll set up allows you to exert extremely high forces through the work roll and yet keep the work roll from extreme flexing. The take up roll on the Z Mill also exerts a tension on the coil as it comes through the mill. The combination of high pressure and tension makes the mill capable of rolling material thin and flat.

Z-bus : Z-bus a matrix which contains the impedance of each element in an electric power system.

Zeeman broadening : Zeeman broadening inhomogeneous spectral broadening of a transition in a laser medium due to Zeeman shifts that vary among the laser atoms or molecules in the medium.

zener breakdown : zener breakdown the electrical breakdown occurring on the reverse biasing of a zener diode. Zener breakdown occurs when the electric field in the depletion layer increases to the point where it can break covalent bonds and generate electron-hole pairs.

Zener Diode: It also permits the flow of current in the reverse direction when the voltage is above a certain value known as breakdown voltage.

zener diode: zener diode a pn-junction diode that has an abrupt rise in current at a reverse-bias voltage V_z , which is usually between 3 to 6 volts. Zener diodes are deliberately fabricated to operate in the reverse breakdown region at a specified voltage and are often used in voltage reference or voltage regulator circuits.

Zener Diode: A semiconductor device designed to operate at a fixed voltage as a voltage regulator

zener diode: A junction diode designed to operate in the reverse bias region.

Zener Diode: The diode which permits current to flow in the forward direction and into the reverse direction when the voltage is above a certain value.

zepto (z) : Decimal sub-multiple prefix corresponding to 10⁻²¹

zero: zero the values of a complex function which cause the value of the function to equal zero. The zeros are all natural frequencies of vibration, or resonances of the circuit described by the equation. They are influenced by all elements in the circuit, and will move with any circuit element change (susceptible to load pulling).

Zero (Balance): The output of the transducer when zero pressure is applied.

Zero Crossing: The point at which a sinusoidal voltage or current waveform crosses the zero reference axis.

zero crossing : zero crossing a point where a function changes sign; in a digital image I, a point x for which $I(x) > 0$ and $I(x+1) < 0$ for some x, or vice versa.

zero current switching (ZCS) : zero current switching (ZCS) the control of converter switches such that the switch is turned on or off only when the current through it is zero at the switching instant. This is typically achieved through the use of some form of LC resonance.

Zero Energy Building (ZEB): An energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy.

zero flag : zero flag a bit in the condition code register that indicates whether the result of the last arithmetic or logic instruction is zero (1 for zero, 0 for not zero).

zero input response (ZIR) : zero input response (ZIR) the response of a system to initial conditions (i.e., to the initial energy present in the system) only. For example, the zero input response (ZIR) of the RC circuit shown in the figure is the signal $y_z(t)$; $t=0$ to the initial voltage across the capacitor, with zero voltage applied at the source.

Zero insertion. : (in sdlc) process of including a binary 0 in a transmitted data stream to avoid confusing data and syn characters; the inserted 0 is removed at the receiving end.

Zero Offset: The non-zero output of an instrument, expressed in units of measure, under conditions of true zero.

zero order hold (ZOH) : zero order hold (ZOH) a procedure that samples a signal $x(t)$ at a given sampling instant and holds

that value until the succeeding sampling instant.

zero padding : zero padding technique where a discrete finite length signal is padded by adding some number of zeros at the end of the signal. The discrete Fourier transform of a zero padded signal has more frequency samples or components than that of a nonzero padded signal, although the frequency resolution is not increased. Zero padding is also sometimes used with the discrete Fourier transform to perform a convolution between two signals.

zero phase filter : zero phase filter a filter whose Fourier transform is purely real. In this way the phase response is zero. A filter considered as a signal has zero phase if it is an even signal.

zero sequence: A balanced set of three phase components which have the same magnitude and the same phase angle, and hence hence no sequence. The frequency is of course the same as the original unbalanced three phase system.

zero state response (ZSR) : zero state response (ZSR) the response of a system with zero initial conditions (i.e., zero initial energy present in the system) to an applied input. For example, in the following circuit, the zero state response (ZSR) is the signal $y_{zsr}(t)$; $t > 0$ when the input voltage $f(t)$ is applied, and there is zero initial voltage across the capacitor.

zero voltage switching (ZVS) : zero voltage switching (ZVS) the control of converter switches such that the switch is turned on or off only when the voltage across it is zero at the switching instant. This is typically achieved through the use of some form of LC resonance.

zero-address computer : zero-address computer a class of computer based on zero-address instructions. Stack-based calculators use zero-address computers and can be programmed using postfix notation.

zero-address instruction : zero-address instruction a class of assembly language ALU instruction in which the operands are kept on a first-in-first-out stack in the CPU, and thus require no explicit addresses.

zero-coefficient sensitivity : zero-coefficient sensitivity analysis technique used for evaluation of circuit functions strongly dependent on zero locations (some bridge circuits and bridge oscillators). Zero-coefficient sensitivity is introduced in a way similar to pole-coefficient sensitivity.

zero-error capacity : zero-error capacity for a given channel, the highest information transmission rate, such that there exists channel codes with decoding error probability identically zero. See also capacity region.

Zeroize. : To align cryptographic elements of a cipher machine to a fixed original position.

zero-sequence reactance : zero-sequence reactance the reactive component of the zero sequence impedance. See also symmetrical component.

zero-sum game : zero-sum game one of a wide class of noncooperative two-person games in which the sum of the cost functions of the decision makers is identically zero. In the zero-sum games, cooperation between players is impossible because the gain of one player is a loss of the other one. Thus, the game is characterized by only one cost function, which is minimized by the first player and maximized by the second one. To the zero-sum game one could also transform a constant-sum game in which the sum of the cost functions is constant. The solution in the zero-sum games has a form of saddle-point equilibrium, and roughly speaking it exists for problems in which max and min operations on the cost function commute. In zero-sum games without equilibrium in pure strategies it is possible to find saddle point in mixed strategies if the game is played many times in the same conditions. The resulting outcomes are average gains or losses of the players.

zetta (Z): Decimal multiple prefix corresponding to 10^{21} The signal in an oscilloscope that controls the electron-beam brightness as the trace is formed.

zig-zag ground : zig-zag ground (1) a grounding arrangement which is used to supply single phase grounded circuits from an ungrounded three-phase delta connected electric power line.(2) the winding arrangement within a grounding transformer.

zinc oxide arrester : zinc oxide arrester a lightning arrester that consists of a stack of ZnO disks stacked within a vented porcelain tube. See gapless arrester.

Zinc whiskers: These form on the surfaces of object that electroplated or galvanized with zinc.

zip : zip a file format and a set of data compression algorithms used to store one or more files in a single file. Originally devised by Phil Katz and placed in the public domain.

Zircaloy: Zirconium alloy used as a tube to contain uranium oxide fuel pellets in a reactor fuel assembly.

Zircon: The mineral zircon silicate, $ZrSiO_4$, a very high melting point acid refractory material used as a molding material in steel foundries.

Zirconia: ZrO_2 an acid refractory up to 2500 B0C (4532 B0F) having good thermal shock resistance and low electrical resistivity.

Zirconium: Silvery white, metallic element, mp 1860 B0C (3380 B0F), a powerful deoxidizer when added to molten steel.

Ziv-Lempel (ZL) coding : Ziv-Lempel (ZL) coding a method for lossless source coding, due to J. Ziv and A. Lempel (1977). ZL coding is capable of achieving the bound given by the source coding theorem. Commonly used to compress computer files. See also LZ77, LZ78, and Lempel-Ziv-Welch coding.

Z-marker. : A type of radio beacon, the emissions of which radiate in a vertical cone shaped pattern. Synonymous with beacon z marker, cone of silence.

Zn: Chemical symbol for Zinc

zonal coding : zonal coding a coding scheme in transform coding in which only those transform coefficients located in a specified zone in the transform domain are coded. For its counter-part, refer to threshold coding.

zonal sampling : zonal sampling in threshold sample selection it is difficult to transmit to the receiver which coefficients were sent and which were not. In zonal coding, all coefficients are transmitted in order of increasing spatial frequency or some

other predetermined order and an end-of-block code-word is sent when all code words are below the threshold. See also threshold sample selection.

zone of protection : zone of protection the area of a power system for which a particular set of protective relays has primary protection responsibility. In typical cases, operation of any of these relays will open circuit breakers which will isolate this zone. Each major power system component (line, transformer, bus, generator) has a separate zone of protection.

zone plate : zone plate a Fresnel optical circular grating that produces the spatial frequencies to measure the resolution and the performance of telephoto- graphic or television systems. A moving Fresnel zone plate can measure the performance of line- or frame-based comb filters, the performance of scan converters, and the scan aperture of television images.

zone recording : zone recording a technique that allows the number of sectors per track on a magnetic disk to vary with the radius of the track. The tracks are divided into several zones, such that the number of sectors per track is determined by the maximum possible bit density on the innermost track in each zone.

Zone refining : Method of purifying solid rods by means of melting narrow zones through the rods. These zones are slowly moved from one end of the rod to the other, sweeping out the impurities.

z-parameters: z-parameters the input and output impedances that are used to characterize a two port device (network).

Zr: Chemical symbol for Zirconium

Zygo: A method for nondestructive surface inspection of primarily non magnetic materials using fluorescent penetrants. Trade name of Magnaflux Corp.