

Glossary of Terms

A

Alternate Current

Also known as AC. A flow of electricity through a conductor that continuously reverses its direction of flow, in contrast to direct current (DC). Nearly all electricity generated in the United States is alternating current.

Alternating Current (AC)

An electric current that reverses its direction of flow periodically (see Frequency) as contrasted to Direct Current (DC) that constantly flows in one direction. In the US this direction change occurs 60 times a second (60 cycles or 60 hertz).

Ampere (Amp)

The unit of measurement for the rate of flow of electric current. It is proportional to the quantity of Electrons flowing through a Conductor past a given point in one second. It is analogous to gallons per minute of water flowing in a water piping system. It is the unit current produced in a Circuit by one volt acting through a Resistance of one ohm.

Annual Meeting

A gathering once a year of EMC members held in accordance with an EMC's bylaws, usually includes the election of directors and a report on the financial condition, operating highlights and plans of the EMC.

Annual Reports

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Apparent Power

That power which is proportional to the mathematical product of the volts and amperes (volt-amps) measured in a Circuit divided by 1,000. It is designated in kilovolt-amperes (kVA) and is comprised of both "real" and "reactive" power.

B

Bus

An Electrical Conductor that serves as a common "connection" for two (or more) Electrical Circuits. Commonly used in Substations. It may be in the form of "rigid" Bars or Tubes, either circular or rectangular in cross-section, or in the form of Stranded-conductor Overhead Cables held under tension. Provides a quick, convenient means of rearranging Circuit "connections" to keep power flowing or to restore power in case of equipment damage.

Bylaws

Rules for operating an EMC approved by the membership.

C

Cable

A fully insulated package made of more than one Conductor that can be installed in place of individual Wires.

Capacitor

A device that maintains (or increases) the voltage of Transmission and Distribution Lines that is installed in Substations and on Poles. Also, a device installed in a customer's facility to improve the power factor.

Capital Credits

Margins or profits credited or assigned to members of an EMC based on their purchases from the EMC. Used by the cooperative as working capital for a period of time, then, in many cases paid out to the members. Also known as patronage capital. This is a feature and benefit of the cooperative type of business. The EMCs of Georgia currently return about \$20 million a year to members in capital credits.

CFC

National Rural Utilities Cooperative Finance Corporation. Based near Washington D.C., CFC provides funds in the private capital markets. A financing source for EMCs seeking loans to expand or update distribution systems.

Circuit

A Conductor or a system of Conductors providing the "path" through which an electric current flows-or is intended to-flow.

Circuit Breaker

A Switch that automatically disconnects power to a Circuit in the event of an "overloaded" condition caused by too many amps flowing on the Circuit.

Circuit Voltage

The voltage of a Circuit in an electric system is the electric pressure measured in volts. It is generally a "nominal rating" based on the normal difference of voltage between any two Conductors in the Circuit.

Conductor

A Wire, Cable, Busbar, Rod, or Tube that serves as a "path" for electrical flow.

Contact Newsletter

CONTACT Newsletter reports on the latest issues affecting Georgia's 42 EMCs and activities conducted on their behalf. The bi-weekly publication is mailed to more than 1,000 EMC managers, directors and key staff.

Control Center

A place and function at an EMC where the entire system of electric distribution and delivery is monitored. Also known as dispatch center.

Cooperative

Also known as co-op. A member-owned business with membership open to those who use its services. Democratically controlled and operated on a non-profit basis, a cooperative assigns any margins or profits to members on the basis of patronage (see capital credits). The principals of cooperatives are 1) open and voluntary membership; 2) democratic control -- one member, one vote; 3) limited return on investment (capital credits); 4) return of surplus to members (capital credits); 5) cooperative education; and 6) cooperation among cooperatives.

Cycle

During one Cycle of Alternating Electric Current, the current goes from "zero" potential (or voltage) to a maximum in one direction, back to "zero," then to a maximum in the other direction, and then back again to "zero." The number of such complete Cycles made each second determines the Frequency of the current.

D**Demand**

The "rate" at which electric power is delivered to-or by-a system, part of a system, or a piece of equipment expressed in kilowatts, kilovolt-amperes or other suitable unit at a given instant-or averaged over any designated period of time. The primary source of an Electric Utility's "Demand" is the power-consuming equipment of its customers.

Demand Charge

The specified charge to be billed on the basis of the "demand" used by the customer under an applicable Rate Schedule or contract.

Demand Interval

The period of time during which the electric energy flow is averaged in determining electrical "demand" (i.e. 60-minute, 30-minute, 15-minute or instantaneous).

Design Voltage

The nominal voltage for which a Line or piece of equipment is designed. This is a reference level of voltage for identification-and not necessarily the precise level at which it operates.

Direct Current

Also known as DC. Electricity that flows through a conductor in a single direction. In contrast to alternating current or AC, which continually reverses the direction of flow.

Direct Current (DC)

Electricity that flows continuously in one direction as contrasted with Alternating Current that flows in one direction than reverses. A Battery produces Direct Current.

Dispatch Center

A place and function at an EMC where the entire system of electric distribution and delivery is monitored. Also known as control center.

Distribution

The act or process of distributing electric energy from convenient points on the transmission or bulk power system to the consumers. A functional classification relating to that portion of a Utility Plant used for the purpose of delivering electric energy from convenient points on the transmission system to the consumers or to expenses relating to the operation and maintenance of a Distribution Plant.

Distribution Cooperative

An electric cooperative that purchases wholesale power and delivers it to member-consumers.

Distribution Feeder Line

An Electric Distribution Line supplying power to customers in a given area. Distribution Feeder Lines are commonly "tapped off" a Main Distribution Circuit to supply only a portion of the load in an area.

Distribution Line

One or more Circuits of an electrical distribution system that operates at less than 39,000 volts on the same line of Poles (or Supporting Structures).

E

Electric Circuit Breaker Panel

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Electric Cooperative

A business that follows cooperative principles and purchases wholesale electric power to deliver to its member-consumers. Nationwide, known as Electric Co-ops, Electric Cooperatives, Public Power Districts (PPD), REA, Energy Co-op, REC (Rural Electric Cooperative), RECC (Rural Electric Cooperative Corporation), Electric Power Association (EPA), Power & Light Company, Power Co-op, Electric Co-op Association, REMC (Rural Electric Membership Corporation), Electric Association, Electric Co-op Corp.

Electric Cooperative (Co-op)

A group of persons who have organized a joint venture for the purpose of supplying electric energy to a specified area. Such ventures are generally exempt from Federal

Income Tax Laws. Most have been financed by the Rural Electrification Administration and are governed by an elected Board of Directors from the membership.

Electric Meter

A device used to measure and record the amount of electricity used by a consumer.

Electric Utilities

All enterprises engaged in the production and/or distribution of electricity for use by the public, including: Investor-owned Electric Utility Companies, Cooperatively-owned Electric Utilities, and Government/municipally-owned Electric Utilities.

Electricity

Electric current or power that results from the movement of electrons in a conductor from a negatively charged point to a positively charged point.

Energized System

An operational system capable of supplying the Circuits rated voltage and Frequency. A system can be "energized" without actually supplying load.

Energy

The amount of power consumed over a given time period. As commonly used in the electric utility industry, electric energy is measured in units of kilowatt-hours.

Energy Charge

That portion of the billed charge for electric service based upon the electric energy (kilowatt-hours) used by the customer over some extended time period.

Extra High-Voltage (EHV)

A term applied to voltage levels of Transmission Lines that are higher than the voltage levels commonly used. At present, the electric utility industry generally considers EHV to be any voltage greater than 345,000 volts (345 kW).

F

Farad

The measure of "Capacitance", the amount of electrical charge that a Capacitor can store for each volt of applied potential. The farad is a very large unit of "Capacitance." Practical devices are more often rated in terms of microfarads, where "micro" means 1 millionth.

Fault

A failure (or interruption) in an Electrical Line, Cable, or an associated piece of equipment that create potentially hazardous conditions.

FERC

Federal Energy Regulatory Commission. Formed in 1977 to set and enforce the wholesale electric rates that investor-owned utilities charge electric cooperatives and other wholesale customers; also licenses hydroelectric projects. It is part of the U.S. Department of Energy, but functions independently.

The number of "cycles" through which an electric current passes per second. Frequency has been standardized in the North American electric industry at 60 cycles per second (60 hertz). Other areas around the world use either 60-or 50-cycles per second.

G

Generating Station, Generating Plant, or Power Plant

A facility (or operation) for converting mechanical, chemical, and/or nuclear energy into electric energy.

Generation and Transmission Cooperative

Also known as G&T. A power-supply cooperative owned by a group of distribution cooperatives. G&Ts generate power or purchase it from public or investor-owned utilities, or from both.

Generation Cooperative

A power-supply cooperative owned by a group of distribution cooperatives. This type of cooperative does not move or transmit power. There are only a few generation cooperatives nationwide. Some previously were known as G&Ts but, in a process called "unbundling" in the 1990s, some G&Ts separated the generating and transmitting functions.

Grid

A system of interconnected high-voltage transmission lines and power-generating facilities that allows bulk-power suppliers to share resources on a regional basis. This system provides emergency generation and transmission.

Ground

The practice of connecting one Wire of an Electrical Circuit to the earth electrically through a Wire and Ground Rod.

H**Henries**

The measure of "Inductance" (the characteristic of an Electrical Circuit that makes itself evident by opposing the starting, stopping, or changing of current flow. This "inertia" of current flow or the tendency to resist changes in flow is measured in units called "Henries."

Hydro-electric System

An electric generating system where the energy is supplied by water flowing downstream from a dam through a turbine-generator.

I**Independent Power Producers**

Also known as IPP. Entity that generates electricity as a byproduct of another manufacturing process. For example, a company that generates large amounts of heat may use the heat to convert steam into electricity.

Insulation

The protective material covering the electric Wire that does not conduct electricity. Rubber, polyethylene, and thermoplastic materials are commonly used.

Insulator

The porcelain support used to insulate the Electrical Conductors from the Pole (or Tower) of a distribution of transmission system.

Investor-owned Electric Utilities

Those Electric Utilities organized as tax-paying businesses, usually financed by the sale of securities in the free market, and whose properties are managed by an appointed Board of Directors.

Investor-Owned Utility

Also known as IOU. A stockholder-owned power company that generates and distributes electric energy for a profit.

J

No Terms under "J" Found

K

Kilovar (kVAR)

1000 "reactive" volt-amperes; the measure of the Reactive Power in an electrical system. (See Reactive Power.)

Kilovolt-amperes (kVA)

1,000 volt-amperes; the measure of the Apparent Power in an electrical system and is comprised of both "real" and "reactive" power. (See Apparent Power.)

Kilovolts

A kilovolt is equal to 1,000 volts. The common industry abbreviation is kV.

Kilowatt (kW)

One (1) kilowatt is equal to 1000 watts; the measure of the Real Power in an electrical system. (See Watts, Real Power.)

Kilowatt-hour (kWh)

The quantity of electrical energy (1000 watts) operating for one hour. For example, a 100-watt light bulb burning for 10 hours uses one kilowatt-hour. Kilowatt-Hour is the basic measure of electric energy generation or use. Electric energy is commonly sold by the kilowatt hour.

L

LCRA

The Lower Colorado River Authority or LCRA is a nonprofit public utility that was formed in 1934 by the Texas Legislature. LCRA's mission is to protect people, property and the environment by providing public services for more than one million people in Central and Southeast Texas. These services include electric and water supplies, flood management, water and wastewater utilities, public parks along the Highland Lakes and lower Colorado River, and community and economic development services to rural and suburban communities

Line Loss

Can refer to the amount of voltage, power, or energy lost when carrying-current over a "conductive path" due the Resistance of the "conductive path."

Line Transformer

A device used to raise or lower voltage in electric distribution or transmission lines.

Load

The amount of electric power delivered (or required), at any specified point(s) on a system. Load originates primarily at the power-consuming equipment of the customers. (See Demand.)

Load Factor

The "ratio" of the average load in kilowatts applied during a designated period to the peak or maximum load in kilowatts occurring in that period. Multiplying the kilowatt-hours in the period by 100 and dividing by the product of the maximum demand in kilowatts and the number of hours in the period may also derive Load Factor in Percent.

M

Municipal

Electric distribution system owned by a city to provide service for its residents. Controlled and regulated by city governments.

N

Nameplate Rating

The full-load continuous "rating" of a piece of electrical equipment under specified conditions as designated by the manufacturer; it is usually indicated on a Nameplate attached mechanically to the individual Machine or Device.

Newsletters

Regular communication mailed to your EMC's consumers and often also posted on your EMC's web site that may include updates from management, features on employees and consumers, information about significant upgrades to your EMC's system, community activities your EMC is involved with and articles that address electric safety and questions frequently asked by your consumers.

NRECA

National Rural Electric Cooperative Association, based outside of Washington D.C., is the national association representing about 1,000 electric cooperatives nationwide. It provides services and programs in the areas of government relations, education, training, insurance, benefits and more. NRECA produces monthly RE Magazine and twice-monthly Electric Co-op Today newsletter. Learn more at www.nreca.coop.

O

Ohm

The unit of measurement of electrical Resistance to the flow of current. It is that Resistance through which a difference of potential of one volt will produce a current of one ampere.

Overhead Lines

A carrier of electricity on an electric power system that is above ground and overhead, from pole to pole. In contrast to underground lines.

P

Peak Demand

The maximum amount of electrical power produced-or used by-a system during a specified time period.

Pole-Mounted Transformer

The Transformer mounted on a Pole for overhead electrical service which "steps down" primary distribution voltage for use by individual residential customers.

Power (Electric)

the ability to do work; the "rate" of generating, transferring, or using electrical energy usually expressed in watts, kilowatts, or megawatts.

Power Factor

the "ratio" of Real Power (kW) to Apparent Power (kVA) for any given load and time generally expressed as a Percentage Ratio.

Power Marketer

A person or entity that buys power in bulk from one or more sources for resale to all classes of electric customers, including residential, commercial, and industrial users, but does not own its own generation or transmission facilities.

Primary Voltage

The voltage measured on the "supply side" of any piece of equipment in the electrical system; this is the "side" connected closest to the generation source. The voltage measured on the "output side" of the device connected away from the generation source is called the secondary voltage.

Publicly Owned Utilities

Refers to all electric utilities owned by local, state or federal governments.

Q**No Terms under "Q" Found****R****Reactive Power**

The portion of Apparent Power that does no useful work in an Electrical Circuit. It is commonly measured in kilovars (kVARs) and must be supplied to most types of equipment with "Coils" of Wires using magnetic fields (i.e. Motors) to magnetize the Motor Windings. It is supplied by the Generator or by Capacitors.

Real Power

This is the work-producing part of Apparent Power. It is the "rate of supply" of the actual power doing the work and commonly measured in kilowatts (kW).

Recloser

A Switch which functions like a Circuit Breaker, protecting Distribution Circuits from "fault" conditions. A Recloser will automatically restore the Circuit in the event of a temporary "fault" after a short time period. Such things as Tree Branches brushing the Lines or Lightning can cause temporary "faults."

Relays

Electromechanical Devices that can be used in electrical systems to operate Switches and provide better control of Electrical Devices.

Rural Electrification Act

The Rural Electrification Act of 1936 was intended to light the nation by supplying the infrastructure and funding to electrify isolated U.S. farms. The legislation established a series of member-owned electric cooperatives that purchased power on a wholesale basis.

Rural Electrification Administration

(REA) A Department of Agriculture agency established by Executive Order May 11, 1935, to lend money and provide engineering services to electric and telephone cooperatives. On October 20, 1994, as part of an Agriculture Department reorganization, REA became the Rural Utilities Service.

S**SCADA**

Stands for Supervisory Control and Data Acquisition. This is a system that monitors activity at an electric system's substation and transmits the information to a central computer.

Secondary Circuit

The lower-voltage system of Circuits and equipment that connects to the Distribution Circuit on the low-voltage side of the Transformer between the Distribution Line and customer.

Secondary Distribution System

The lower-voltage system of Circuits and equipment that connects to the distribution system to provide service voltage to customers.

Secondary Voltage

The voltage measured on the "output side" of any piece of equipment in the electrical system. This is the side connected farthest away from the generation source. The voltage measured on the "input side" of the device connected closest to the generation source is called the primary voltage.

Service Drop

The Conductors between the Transformer connected to the Distribution Line and the customer's electrical service.

Service Entrance

The point at which electricity enters a home or business.

Single-phase Line

A Circuit made up of Wires connected to only one "phase" of a multi-phase system; typically supplies much smaller loads than Three-phase Lines.

Step-Down

The process of lowering a Circuit's voltage from a higher-to-lower voltage.

Substation

An electrical facility containing equipment for controlling the flow of electricity from supplier to user.

Substation

an assemblage of equipment for the purpose of switching and/or changing or regulating the voltage and flow of electricity. It consists of small buildings (or fenced-in yards) containing Switches, Transformers, other equipment, and structures. Adjustments of voltage, monitoring of Circuits, and other service functions take place in this installation.

T**Three-phase Line**

An Electrical Circuit made up of three individual "phases" which collectively supply power at given voltage levels.

Transformer

An "electromagnetic" device for changing the voltage of Alternating- current electricity. A Step-up Transformer increases the voltage from primary-to-secondary, while a Step-down Transformer decreases it.

Transmission

The act or process of transporting electric energy in bulk from a source(s) of supply to other principal parts of the system or to other Utility Systems. Transmission Lines are Lines with voltages exceeding 39,000 volts (39 kV).

Transmission Cooperative

A cooperative formed and owned by distribution cooperatives that moves bulk electricity from where it is generated to the electric cooperative distribution system.

Trip

Refers to the action of disconnecting a Circuit to "de-energize" it. Usually refers to action taken while the Circuit was under load.

Turbine-Generator

A rotary-type unit consisting of a Turbine and an Electric Generator for making electricity. In hydro-electric systems, the turbine is a water turbine (i.e. driven by water flow from a dam) and in fossil-fueled or nuclear systems, the turbine is a steam turbine.

TVA

Stands for Tennessee Valley Authority. A unique corporate agency within the federal government created by Congress to develop hydroelectric resources in the Tennessee River Valley. TVA provides wholesale power to three EMCs in North Georgia: Blue Ridge Mountain EMC in Young Harris, North Georgia EMC in Dalton and Tri-State EMC in McCaysville.

U

No Terms under "U" Found

V

Voltage

The unit of "electromotive force" or "electric pressure" analogous to water pressure in a water piping system that is a measure of the push or force which causes electricity to flow. It is the "electromotive force" of one (1) volt that, if steadily applied to a Circuit having a Resistance of one ohm, will produce a current of one (1) ampere.

Voltage Regulator

A type of "adjustable" Transformer which helps maintain consistent voltage on Distribution Lines as the customer's "demand" for electricity changes.

Volt-ampere (VA)

The basic unit of Apparent Power; the volt-amperes of an Electric Circuit are the mathematical product of the volts and amperes measured in the Circuit.

W

Watts

The electrical unit of power or "rate" of doing work in the metric system; the "rate" of energy transfer equivalent to one (1) ampere flowing under a pressure of one (1) volt at unity power factor. It is analogous to horsepower of "mechanical power" in the English system of units. One horsepower equals 746 watts.

Wholesale Power

Bulk power purchased from a power generating cooperative, company or power marketer that is distributed and sold to EMC members.

X

No Terms under "X" Found

Y

No Terms under "Y" Found

Z

No Terms under "Z" Found