

# Appendix

# List of Acronyms and Terms

## Acronyms

<b>AC:</b>	alternating current
<b>ACE:</b>	area control error
<b>AGC:</b>	automatic generation control
<b>ANSI:</b>	American National Standards Institute
<b>CWIP:</b>	Construction Work in Progress
<b>DC:</b>	direct current
<b>DOE:</b>	Department of Energy
<b>DSG:</b>	dispersed source of generation
<b>ECAR:</b>	East Central Area Reliability Coordination Agreement
<b>ECC:</b>	energy control center
<b>EHV:</b>	extra high voltage
<b>ELF:</b>	extremely low frequency
<b>EMS:</b>	energy management system
<b>ERCOT:</b>	Electric Reliability Council of Texas
<b>FERC:</b>	Federal Energy Regulatory Commission
<b>FPA:</b>	Federal Power Act
<b>HVDC:</b>	High voltage direct current
<b>IPP:</b>	Independent power producer
<b>kV:</b>	1,000 volts (kilovolt)
<b>kW:</b>	1,000 watts (kilowatt)
<b>kWh:</b>	kilowatthour
<b>LOLP:</b>	loss of load probability
<b>MAAC:</b>	Mid-Atlantic Area Council
<b>MAIN:</b>	Mid-American Interconnected Network
<b>MAPP:</b>	Mid-Continent Area Power Pool
<b>MW:</b>	1 million watts (megawatt)
<b>NARUC:</b>	National Association of Regulatory Utility Commissioners
<b>NEPA:</b>	National Environmental Policy Act of 1969
<b>NEPOOL:</b>	New England Power Pool
<b>NERC:</b>	North American Electric Reliability Council
<b>NOPR:</b>	notice of proposed rulemaking
<b>NRC:</b>	Nuclear Regulatory Commission
<b>PJM:</b>	Pennsylvania/New Jersey/Maryland Interconnection
<b>NPCC:</b>	Northeast Power Coordinating Council
<b>NUG:</b>	nonutility generation
<b>PSD:</b>	prevention of significant deterioration
<b>Puc:</b>	public utility commission
<b>PUHCA:</b>	Public Utility Holding Company Act of 1935
<b>PURPA:</b>	Public Utility Regulatory Policies Act of 1978
<b>QF:</b>	qualifying facility
<b>SCADA:</b>	supervisory control and data acquisition
<b>SERC:</b>	Southeastern Electric Reliability Council
<b>SPP:</b>	Southwest Power Pool
<b>VAR:</b>	volt-amps-reactive

**V/m:** volts per meter

**WSCC:** Western Systems Coordinating Council

## Terms

**Alternating Current (AC):** Electric current that reverses direction many times per second (120 times per second in the United States); almost the entire U.S. power system uses AC except for some long-distance direct current (DC) transmission lines.

**Automatic Generation Control (AGC):** A system used to control the output of electric generators in a control area to balance the supply and demand of power and execute power transactions with neighboring control areas.

**Bulk Power System:** Includes generating units, transmission lines, and related equipment.

**Capacity Margin:** The difference between generation capacity and peak load expressed as a percentage of capacity.

**Circuit:** A conductor or system of conductors that forms a closed loop through which current flows.

**Cogeneration:** Production of both electrical (or mechanical) energy and thermal energy from the same primary energy source.

**Conductors:** Bundled strands of wire that carry electric current.

**Control Area:** A region with an energy control center responsible for operating the power system within that area.

**Coordinating Transactions:** Involves the scheduling and control of generation to implement power transfers, as well as monitoring and recording the transactions for billing or for other compensation.

**Direct Current (DC):** Electric current that flows continuously in one direction.

**Distribution lines:** Power lines delivering electricity to customers at relatively low voltages typically between 110 and 69,000 volts.

**Economic Dispatch:** A system for selecting generating units to operate to balance supply and demand at minimum cost.

**Economy Transfers:** Power purchased by one system from another because it is less expensive than power produced by the first system's own generating facilities.

**Electric Field:** The electric force that a charged object is capable of exerting on other charges in its vicinity.

**Hertz (Hz):** Frequency measured in cycles per second; power systems in the United States operate at "60 Hz.

**Load Management:** The manipulation of customer demand by economic and/or technical means.

**Loop Flows:** Parallel path flows crossing utilities' boundaries along paths not contracted for or scheduled.

**Loss of Load Probability (LOLP):** A measure of the long-term expectation that a utility will be unable to meet customer demand.

**Magnetic Field:** The magnetic force that a charged object is capable of exerting on other charges in its vicinity.

**Qualifying Facility (QF):** Generating unit qualifying for special regulatory treatment under the Public Utility Regulatory Policies Act of 1978.

**Radial or Feeder lines:** Transmission lines connected to the grid at only one end; the other end is connected either to a power plant or distribution system.

**Ramp Rate:** The rate at which a generator's power output can change.

**Reactance:** A phenomenon of AC power in which the voltage and current are out of phase, that is, they do not peak simultaneously.

**Reactive Power:** Power which is stored by reactive elements in a power system; called VARs (Volt-Amperes- Reactive).

**Real Power:** The rate at which energy is delivered to a load to be transformed into heat, light, or physical motion.

**Reliability:** The ongoing ability of a power system to avoid outages and continue to supply electricity with the appropriate frequency and voltage to customers.

**Reserve Margin:** The difference between generating capacity and peak load, expressed as a percentage of peak load.

**Retail Wheeling:** Wheeling for delivery of power to a retail customer.

**Security:** The ability of the bulk power system to withstand sudden disturbances, such as the failure of a generator or transmission line.

**Speed Governor:** A device on a generating unit which adjusts the unit's power output to maintain the exact frequency.

**Stability:** The ability to maintain synchronous operation following disturbance.

**Substations:** A collection of power system equipment, such as voltage transformers, circuit breakers, and switches.

**Supervisory Control and Data Acquisition:** Telemetry and control equipment which monitors voltages and power flows and coordinates the transmission line and voltage control equipment.

**Telemetry:** Monitoring and communication equipment.

**Transmission Access:** The ability to use a transmission system.

**Transmission System:** An interconnected group of individual lines, which transport electricity over long distances.

**Volt:** A unit of electromotive force or the electrical pressure that can push a current through a circuit; can be positive or negative.

**Voltage:** A measure of the difference in volts between any two conductors or between a conductor and the ground, which is considered to be zero.

**Watt:** The unit of measure of electrical power or the rate of doing work.

**Wheeling:** The use of the transmission facilities of one system to transmit power produced by other entities.

**Wholesale Wheeling:** Wheeling for delivery to a utility system.