

Appendix D

Glossary

Ampere (amps): a unit of electrical current produced in a circuit by one volt passing across resistance of one ohm.

Blackout: Emergency loss of electricity due to the failure of generation, transmission or distribution.

Circuit: A path through which electric current can flow.

Congestion: Transmission paths that are constrained, which may limit power transactions because of insufficient capacity. Congestion can be relieved by increasing generation or by reducing load.

Control Area: Electric power system in which operators match loads to resources within the system, maintain scheduled interchange between control areas, maintain frequency within reasonable limits, and provide sufficient generation capacity to maintain operating reserves.

Curtailement: A reduction in the scheduled capacity or energy delivery due to a transmission constraint.

Demand: The amount of power consumers require at a particular time. Demand is synonymous with load. System demand is measured in megawatts.

Distributed Generation (DG): Electric generation that feeds into the distribution grid, rather than the bulk transmission grid, whether on the utility side of the meter, or on the customer side.

Electrical Energy: The generation or use of electric power over a period, usually expressed in megawatt hours (MWh), kilowatt-hours (KWh) or gigawatt hours (GWh), as opposed to electric capacity, which is measured in kilowatts.

Federal Energy Regulatory Commission (FERC): A federal agency created in 1977 to regulate, among other things, interstate wholesale sales and transportation of gas and electricity at “just and reasonable” rates.

Forced Outage: Shutdown of a generating unit, transmission line or other facility for emergency reasons. Forced outage reserves consist of peak generating capability available to serve loads during forced outages.

Grid: Layout of the electrical transmission system; a network of transmission lines and the associated substations and other equipment required to move power.

High Voltage Lines: Used to transmit power between utilities. The definition of “high” in Wisconsin is generally 69 kilovolts and above. “low” voltage generally means lines that deliver power to homes and most businesses.

Kilowatt (kW): A unit to measure the rate at which electric power is being consumed. One kilowatt equals 1,000 watts.

Kilowatt-hour (kWh): The basic unit for pricing electric energy; equal to one kilowatt of power supplied continuously for one hour. (Or the amount of electricity needed to light 10 100-watt light bulbs for one hour.) One kilowatt hour equals 1,000 watt hours.

Line Losses: Power lost in the course of transmitting and distributing electricity.

Load: The amount of power demanded by consumers. It is synonymous with demand.

Load Balancing: Meeting fluctuations in demand or matching generation to load to keep the electrical system in balance.

Load Forecast: An attempt to determine energy consumption at a future point in time.

Load Profiling: The process of examining a consumer’s energy use in order to gauge the level of power being consumed and at what times during the day.

Load Shape: Variation in the magnitude of the power load over a daily, weekly or yearly period.

Load Shedding: The process of deliberately removing (either manually or automatically) preselected demands from a power system, in response to an abnormal condition (such as very high load), to maintain the integrity of the system.

Load Shifting: Shifting load from peak to off-peak periods, including use of storage water heating, storage space heating, cool storage, and customer load shifts.

Megawatt (MW): One megawatt equals one million watts or 1,000 kilowatts

Network: A system of transmission or distribution lines cross-connected to permit multiple supplies to enter the system.

North American Electric Reliability Council (NERC): Formed in 1968 to promote the reliability of generation and transmission in the electric utility industry. Consists of 10 regional reliability councils and one affiliate encompassing all the electric systems in the United States, Canada and northern part of Baja, Mexico.

Ohm: A unit of resistance in electric flow. It is that resistance through which a difference of potential (or electromotive force) of one volt will produce a current of one ampere.

Peak Demand: The maximum (usually hourly) demand of all customer demands plus losses. Usually expressed in MW.

Point of Delivery: The physical point of connection between the transmission provider and a utility. Power is metered here to determine the cost of the transmission service.

Scheduled Outage: Scheduled outages occur when a portion of a power system is shut down intentionally, typically to allow for pre-planned activities such as maintenance.

Step-Down/Step-Up: Step-down is the process of changing electricity from a higher to a lower voltage. Step-up is the opposite. Step-up transformers usually are located at generator sites, while step-down transformers are found at the distribution side.

Substation: Equipment that switches, steps down, or regulates voltage of electricity. Also serves as a control and transfer point on a transmission system.

Transfer Capability: The measure of the ability of interconnected electric systems to move or transfer power in a reliable manner from one area to another over all transmission lines (or paths) between those areas under specified system conditions. Generally expressed in megawatts (MW). In this context, "area" may be an individual electric system, power pool, control area, subregion or NERC region, or a portion of any of these.

Transformer: Electrical device that changes the voltage in AC circuits.

Transmission Reliability Margin (TRM): Amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions.

Transmission: The process of transporting wholesale electric energy at high voltages from a supply source to utilities.

Volt: The unit of electromotive force or electric pressure which, if steadily applied to a circuit having a resistance of one ohm, would produce a current of one ampere.

Watt: The electrical unit of real power or rate of doing work, equivalent to one ampere flowing against an electrical pressure of one volt. One watt is equivalent to about 1/746 horsepower, or one joule per second.