

## GLOSSARY

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**Adequacy.** 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 2009).

**Advisory Council on Historic Preservation:** An independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy.

**Air quality:** The characteristics of the ambient air (all locations accessible to the general public) as indicated by concentrations of the six air pollutants for which national standards have been established, and by measurement of visibility in mandatory federal Class I areas.

**Alluvial:** Pertaining to sediments deposited by modern streams or rivers. **Alluvium** is the material deposited by streams.

**Alternatives analysis:** What CEQ calls the "heart of the EIS;" the evaluation of the Proposal compared to all of the alternatives used to define the issues and provide a clear basis or choice among the options.

**Ambient air:** Any unconfined portion of the atmosphere: open air, surrounding air.

**Ancillary Service.** Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Service Provider's transmission system in accordance with good utility practice. (NERC 2009; from FERC order 888-A.)

**Anthropogenic:** Of or caused by humans.

**Aquifer:** A layer of earth materials that can yield a usable quantity of water to wells.

**Archaeology:** The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of surviving physical evidence of human activity and the reconstruction of related past environments.

**Archeological resources:** Any material of human life or activities that is at least 100 years old, and that is of archaeological interest.

**Average Annual Daily Traffic (ADT):** Daily number of vehicular movements (e.g., passenger vehicles, buses, and trucks) in both directions on a segment of roadway, averaged over a year.

**Balancing Authority.** 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.

**Balancing Authority Area.** The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

**Base flood:** The flood having a one percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the "100-year flood." The base flood is the national standard used by the NFIP and all federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. Base Flood Elevations (BFEs) are typically shown on Flood Insurance Rate Maps (FIRMs).

**Base Flood Elevation (BFE):** The computed elevation to which floodwater is anticipated to rise during the base flood. Base Flood Elevations (BFEs) are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles.

**Baseload:** The minimum demands of electricity on a power station over a given period of time; the amount of electricity required to operate a plant continuously, day and night, all year long.

**Baseload Capacity:** The generating equipment normally operated to serve loads on an around-the-clock basis (EIA 2007a).

**Baseload 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 (EIA 2007a).

**Berm:** A curb, ledge, wall or mound used to contain water, separate materials, and/or prevent the spread of contaminants.

**Best management practices (BMPs):** Methods that have been determined to be the most effective, practical means of preventing or mitigating pollution from non-point sources, including construction sites.

**Base flood:** the flood having a one percent chance of being equaled or exceeded in any given year.

**Binding constraint:** A transmission constraint that causes a change in the dispatch or commitment of one or more Electric Facilities to avoid exceeding, or to relieve, the constraint limit (MISO 2010b, 1.52).

**Bioaccumulation/ biomagnification:** The collection or amplification of a substance in a biological system; the increase in tissue concentration of bioaccumulated chemical as the chemical passes up through two or more food chain levels.

**Biogas:** Gas, typically rich in methane, that is produced by the fermentation of organic matter such as manure under anaerobic conditions.

**Bulk power system:** Facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof), and electric energy from generating facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy (18 CFR 39.1). As defined by NERC (2009), the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher.

**Capacity emergency.** A capacity emergency exists when a Balancing Authority Area's operating capacity, plus firm purchases from other systems, to the extent available or limited by transfer capability, is inadequate to meet its demand plus its regulating requirements (NERC 2009).

**Capacity factor.** The amount of electricity that a plant produces over a period of time, divided by the amount of electricity it could have produced if it had run at full power over that time period.

**Cascading.** In electric transmission, the uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption that cannot be restrained from sequentially spreading beyond an area predetermined by studies (NERC 2009).

**Circuit:** A continuous electrical path along which electricity can flow from a source, like a power plant, to where it is used, like a home. A transmission circuit consists of three phases with each phase on a separate set of conductors.

**Combustion:** Burning. Many important pollutants, such as sulfur dioxide, nitrogen oxides, and particulates (PM-10) are combustion products of the burning of fuels such as coal, oil, gas and wood.

**Conductor:** A wire made up of multiple aluminum strands around a steel core that together carry electricity.

**Constrained Facility.** A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its System Operating Limit or Interconnection Reliability Operating Limit (NERC 2009).

**Community** (in reference to NFIP): Any state, or area or political subdivision thereof, or any Indian tribe or authorized tribal organization or Alaska Native village or authorized native organization, which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

**Contamination:** Introduction into water, air, and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use.

**Contingency:** The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element (NERC 2009).

**Contingency Reserve:** The provision of capacity deployed by the Balancing Authority to meet the Disturbance Control Standard (DCS) and other NERC and Regional Reliability Organization contingency requirements (NERC 2009).

**Contour:** An imaginary line of constant elevation on the ground surface. The corresponding line on a map is called a “contour line”.

**Critical Assets:** Facilities, systems, and equipment which, if destroyed, degraded, or otherwise rendered unavailable, would affect the reliability or operability of the Bulk Electric System (NERC 2009).

**Critical Cyber Assets:** Cyber Assets essential to the reliable operation of Critical Assets.

**Criteria:** Standards, rules, or tests on which a judgment or decision may be based.

**Criteria air pollutants:** A group of 6 common air pollutants regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution) and for which NAAQS have been established. In general, criteria air pollutants are widely distributed over the country. They are: PM (which includes PM<sub>2.5</sub> and PM<sub>10</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb).

**Cultural resources:** Any building, site, district, structure, object, data, or other material significant in history, architecture, archeology, or culture. Cultural resources include: historic properties as defined in the National Historic Preservation Act (HNPAct), cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA), archeological resources as defined in the Archeological Resources Protection Act (ARPA), sacred sites as defined in Executive Order 13007, *Protection and Accommodation of Access to “Indian Sacred Sites,”* to which access is provided under the American Indian Religious Freedom Act (AIRFA), and collections.

**Cumulative impacts:** Impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Effects resulting from individually minor but collectively significant actions taking place over a period of time.

**Cyber Assets:** Programmable electronic devices and communication networks including hardware, software, and data (NERC 2009).

**dBA (A-weighted decibel):** The unit measurement of sound level calculated by taking ten times the common logarithm of the ratio of the magnitude of the particular sound pressure to the standard reference sound pressure of 20 micropascals and its derivatives.

**Decibel (dB):** The A-scale sound level is a quantity, in decibels, read from a standard sound-level meter with A-weighting circuitry. The A-scale weighting discriminates against the lower frequencies according to a relationship approximating the auditory sensitivity of the human ear. The A-scale sound level measures approximately the relative “noisiness” or “annoyance” of many common sounds.

**Demand:** 1. The rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged over any designated interval of time. 2. The rate at which energy is being used by the customer (NERC 2009).

**Demand side management.** The planning, implementation, and monitoring of utility activities designed to encourage consumers to modify patterns of electricity usage, including the timing and level of electricity demand (EIA 2007a). The term for all activities or programs undertaken by Load-Serving Entity or its customers to influence the amount or timing of electricity they use (NERC 2009).

**Discharge:** The volume of fluid plus suspended sediment that passes a given point within a given period of time.

**Direct Control Load Management:** Demand-Side Management that is under the direct control of the system operator. DCLM may control the electric supply to individual appliances or equipment on customer premises. DCLM as defined here does not include Interruptible Demand (NERC 2009).

**Discount rate.** The annual interest on an item, divided by the capital including that interest.

**Dissolved oxygen:** An amount of oxygen dispersed in water, usually expressed as mg/L; DO sustains the lives of fish and other aquatic organisms; cold and flowing water usually contains more DO than warm, stagnant water.

**Distributed generation:** In general, distributed generation is electric generation that is used at or near the source of the generator. Specifically, in EPAAct2005: “An electric power generation facility that is designed to serve retail electric consumers at or near the facility site.” From EIA 2011a: 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).

**Disturbance:** An unplanned event that produces an abnormal system condition (NERC 2009).

**Dominant species:** A plant species that exerts a controlling influence on or defines the character of a community.

**Double circuit:** Two independent circuits on the same structure with each circuit made up of three sets of conductors.

**Drained:** A condition in which ground or surface water has been reduced or eliminated from an area by artificial means.

**Drift:** All the rock materials transported by glacier; includes till, outwash, ice-contact stratified drift, glacial lake sediments and loess (Hobbs and Goebel 1982).

**Efficiency:** The efficiency of an energy-producing unit such as a power plant or engine that burns fuel can be thought of as the ratio of input energy (fuel) to net output energy.

**Electric Facility:** Equipment used for the generation, transmission, storage, or control of the transmission of electricity and that is connected to or part of the Transmission System operated by the Transmission Provider (MISO 2010b 1.171).

**Electric load:** The combined electrical needs of all units in a system.

**Electric system losses:** Total electric energy losses in the electric system. Losses are primarily due to electric resistance within electrical conductors or wires and transformers.

**Endangered species:** A species that is threatened with extinction throughout all or a significant portion of its range.

**Environment:** The total surroundings of an organism, including both non-living (abiotic) and living (biotic) components, that is, other plants and animals as well as those of its own kind.

**Environmental assessment:** A concise public document which serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS [environmental impact statement] or a Finding of No Significant Impact (FONSI) in compliance with NEPA.

**Farmland Protection Policy Act (FPPA):** A federal law that aims to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland.

**Federal Aviation Administration (FAA):** Federal agency primarily responsible for the advancement, safety and regulation of civil aviation in the United States.

**Fill material:** Any material placed in an area to increase surface elevation.

**FIRM:** See “Flood Insurance Rate Map”.

**Firm Demand:** That portion of the Demand that a power supplier is obligated to provide except when system reliability is threatened or during emergency conditions.

**Flood Insurance Rate Map (FIRM):** The official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

**Flora:** plant species that occur in an area.

**Forced Outage:** 1. The removal from service availability of a generating unit, transmission line, or other facility for emergency reasons. 2. The condition in which the equipment is unavailable due to unanticipated failure (NERC 2009).

**Fugitive dust:** Particles lifted into the ambient air due to man-made and natural activities such as the movement of soil, vehicles, equipment, blasting, and wind. This excludes particulate emitted directly from the exhaust of motor vehicles and other internal combustion engines.

**Generating capacity:** The total amount of electrical power that a utility can produce at any one time, usually measured in megawatts.

**Grid (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) (EIA 2011a).

**Groundwater:** Water in the porous rocks and soils of the earth’s crust.

**Growing season:** The portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biologic zero (5° C) (US Department of Agriculture - Soil Conservation Service 1985).

**Habitat:** The environment occupied by individuals of a particular species, population, or community.

**Hazardous substances:** Solid or liquid materials, which may cause or contribute to mortality or serious illness by virtue of physical and chemical characteristics, or pose a hazard to human health or the environment when improperly managed, disposed of, treated, stored, or transported.

**Hazardous waste:** A waste or combination of wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to an increase in mortality or an increase in serious, irreversible

illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

**Heavy metals:** Metallic elements like mercury, lead, cadmium, arsenic, copper and zinc that can be harmful pollutants when they enter air, soil, and water.

**High-voltage Transmission Line (HVTL): Minnesota:** (a) Any transmission line with capacity of 200 kV or more, or (b) Any transmission line with capacity of 100 kV or more with more than 10 miles of its length in Minnesota or that crosses a state line.

**Historic Property:** As defined by the NHPA, a historic property or historic resource is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), including any artifacts, records, and remains that are related to and located in such properties. The term also includes properties of traditional religious and cultural importance (traditional cultural properties), which are eligible for inclusion in the NRHP as a result of their association with the cultural practices or beliefs of an Indian tribe or Native Hawaiian organization.

**Hydric soil:** A soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (US Department of Agriculture-Soil Conservation Service 1985). Hydric soils that occur in areas having positive indicators of hydrophytic vegetation and wetland hydrology are wetland soils.

**Hydroelectric:** Related to electric energy produced by moving water (i.e. through a dam on a river that stores water in a reservoir).

**Hydrology:** The science dealing with the properties, distribution, and circulation of water.

**Hydrophytic vegetation:** The sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. When hydrophytic vegetation comprises a community where indicators of hydric soils and wetland hydrology also occur, the area has wetland vegetation.

**Independent Power Producer:** Any entity that owns or operates an electricity generating facility that is not included in an electric utility's rate base. This term includes, but is not limited to, cogenerators and small power producers and all other nonutility electricity producers, such as exempt wholesale generators, who sell electricity (NERC 2009).

**Interchange Transaction.** An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries (NERC 2009).

**Interconnection Reliability Operating Limit.** A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading Outages that adversely impact the reliability of the Bulk Electric System.

**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) (EIA on-line glossary).

**Karst:** A landscape characterized by the presence of caves, springs, sinkholes and losing streams, created as groundwater dissolves soluble rock such as limestone or dolomite.

**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 (adjusted to remove the impact of inflation) in real dollars (EIA n.d.).

**Limestone:** A sedimentary rock composed of calcium carbonate; a rock of marine origin derived from the lime mud and ooze that accumulated on calm, shallow sea floors.

**Load:** An end-use device or customer that receives power from the electric system (NERC 2009).

**Load-Serving Entity:** Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers (NERC 2009).

**Loess:** Windblown silt and fine sand. Source areas include meltwater channels, outwash plains, and exposed glacial lake beds.

**Megawatthour (MWh).** One million watts delivered for one hour.

**Mitigation:** A method or action to reduce or eliminate adverse program impacts.

**Monitoring (monitor):** Systematically observing, recording, or measuring some environmental attribute, such as air quality or water quality, or ascertaining compliance with a given law, regulation, or standard.

**National Environmental Policy Act (NEPA):** Establishes procedures that federal agencies must follow in making decisions on federal actions that may impact the environment. Procedures include evaluation of environmental effects of proposed actions, and alternatives to proposed actions, involvement of the public and cooperating agencies.

**National Ambient Air Quality Standards (NAAQS):** Standards established at the federal level that define the limits for airborne concentrations of designated “criteria”

pollutants (e.g. nitrogen dioxide, sulfur dioxide, CO, PM, O<sub>3</sub>, and lead) to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards). States may establish more stringent standards if they want to do so.

**National Flood Insurance Program (NFIP):** The NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.

**National Register of Historic Places (NRHP):** The nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service.

**Native Load:** The end-use customers that the Load-Serving Entity is obligated to serve (NERC 2009).

**Native vegetation:** Plant life that occurs naturally in an area without agriculture or cultivation efforts.

**Navigable waters:** The waters of the United States, including the territorial seas; all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide, as defined by Title 40 of the Code of Federal Regulations, Section 110.1 (40 CFR 110.1).

**NEPA:** See “National Environmental Policy Act”.

**Net Generation.** Gross generation minus plant use from all electric utility owned plants. The energy required for pumping at a pumped-storage plant is regarded as plant use and must be deducted from the gross generation.

**Net metering service:** as defined in EPAAct2005, Section 1251: “service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.”

**NFIP:** See “National Flood Insurance Program”.

**Noise:** Sound that is perceived by humans as annoying and unwanted.

**Nonattainment area:** An area that has been designated by the USEPA and the appropriate state air quality agency as exceeding one or more National Ambient Air Quality Standards.

**Non-hydric soil:** A soil that has developed under predominantly aerobic soil conditions. These soils normally support mesophytic or xerophytic species.

**No-rise Certification for Floodways:** Any project in a floodway must be reviewed to determine if the project will increase flood heights. An engineering analysis must be conducted before a permit can be issued. The community's permit file must have a record of the results of this analysis, which can be in the form of a No-rise Certification. This No-rise Certification must be supported by technical data and signed by a registered professional engineer. The supporting technical data should be based on the standard step-backwater computer model used to develop the 100-year floodway shown on the Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM).

**NRHP:** See "National Register of Historic Places".

**Operating Reserve:** That capability above firm system demand required to provide for regulation, load forecasting error, equipment forced and scheduled outages and local area protection. It consists of spinning and non-spinning reserve (NERC 2009).

**Operating Reserve – Non-Spinning:** 1. That generating reserve not connected to the system but capable of serving demand within a specified time. 2. Interruptible load that can be removed from the system in a specified time (NERC 2009).

**Operating Reserve – Spinning:** The portion of Operating Reserve consisting of Generation synchronized to the system and fully available to serve load within the Disturbance Recovery Period following the contingency event; or Load fully removable from the system within the Disturbance Recovery Period following the contingency event (NERC 2009).

**Organic soil:** soil is classified as an organic soil when it is: (1) saturated for prolonged periods (unless artificially drained) and has more than 30-percent organic matter if the mineral fraction is more than 50-percent clay, or more than 20-percent organic matter if the mineral fraction has no clay; or (2) never saturated with water for more than a few days and having more than 34-percent organic matter.

**Outwash:** Stratified drift, chiefly sand and gravel, which has been transported by glacial meltwater. Commonly pitted and collapsed by the melting of underlying ice, especially near former ice margins. Collapsed outwash is recognized by the uncollapsed remnants of the former depositional surface, as opposed to ice-contact stratified drift (Hobbs and Goebel 1982).

**Particulate matter (PM):** Solid or liquid matter suspended in the atmosphere.

**Peak Demand.** The maximum load during a specified period of time.

**Peak Load Plant.** A plant usually housing gas turbines; diesels; or pumped-storage hydroelectric equipment normally used during the peak-load periods.

**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.

**Photovoltaic:** Converting light into electricity; semiconductor devices that convert sunlight into direct current electricity (i.e. solar cells).

**Planning Authority:** The responsible entity that coordinates and integrates transmission facility and service plans, resource plans, and protection systems (NERC 2009).

**Plant community:** All of the plant populations occurring in a shared habitat or environment.

**Potable:** A liquid, usually water, which is drinkable.

**Power purchase agreement:** The off-take contract from a large customer to buy the electricity generated by a power plant.

**Radiative forcing.** Radiative forcing is a measure of how the energy balance of the Earth-atmosphere system is influenced when factors that affect climate are altered. The word radiative arises because these factors change the balance between incoming solar radiation and outgoing infrared radiation within the Earth's atmosphere. This radiative balance controls the Earth's surface temperature. The term forcing is used to indicate that Earth's radiative balance is being pushed away from its normal state.

**Regional Reliability Organization:** 1. An entity that ensures that a defined area of the Bulk Electric System is reliable, adequate and secure. 2. A member of the North American Electric Reliability Council (NERC 2009).

**Regional Reliability Plan:** The plan that specifies the Reliability Coordinators and Balancing Authorities within the Regional Reliability Organization, and explains how reliability coordination will be accomplished (NERC 2009).

**Reliability Coordinator:** 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 Operator's vision (NERC 2009).

**Reliability Coordinator Area:** The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas (NERC 2009).

**Renewable energy portfolio standard:** a requirement on electric utilities and other electric suppliers to supply a minimum percentage or amount of their load with eligible sources of renewable energy.

**Reserve margin:** The amount of unused available capacity of an electric power system (at peak load for a utility system) as a percentage of total capability.

**Resource Planner:** The entity that develops a long-term (generally one year and beyond) plan for the resource adequacy of specific loads (customer demand and energy requirements) within a Planning Authority Area (NERC 2009).

**Right-of-way:** Land area legally acquired for a specific purpose, such as the placement of transmission facilities and for maintenance access.

**Runoff:** The non-infiltrating water entering a stream or other conveyance channel shortly after a rainfall.

**Saturated soil conditions:** A condition in which all easily drained voids (pores) between soil particles in the root zone are temporarily or permanently filled with water to the soil surface at pressures greater than atmospheric.

**Savanna.** A ecosystem that is transitional between the eastern forests and the western prairies, having mosaic of plant communities that represents a continuum from prairie to forest.

**Scoping:** Planning component of the NEPA process at the outset of preparing an EA or an EIS to help determine the scope of the study and the major issues that merit investigation and analysis.

**Sediment:** Particles derived from rock or biological sources that have been transported by water.

**Sensitive receptor:** Areas defined as those sensitive to noise, such as hospitals, residential areas, schools, outdoor theaters, and protected wildlife species.

**Sequestration.** The process of injecting into geologic formations (oil and gas reservoirs, coal bed methane, or saline) or deep-ocean formations.

**SFHA:** See “Special Flood Hazard Area”.

**Shield wire:** A wire connected directly to the top of a transmission structure to protect conductors from a direct lightning strike, minimizing the possibility of power outages.

**SHPO:** See “State Historic Preservation Officer”.

**Siltation:** Deposition of fine mineral particles (silt) on the beds of streams or lakes.

**Single circuit:** A circuit with three sets of conductors.

**Sinkhole:** A rounded depression in the landscape formed when an underground cavity collapses.

**Soil:** Unconsolidated mineral and organic material that supports, or is capable of supporting, plants, and which has recognizable properties due to the integrated effect of climate and living matter acting upon parent material, as conditioned by relief over time.

**Special Flood Hazard Area (SFHA):** The land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on NFIP maps. The SFHA is the area where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

**Source:** Any place or object from which pollutants are released. A source can be a power plant, factory, dry cleaning business, gas station or farm. Cars, trucks and other motor vehicles are sources, and consumer products and machines used in industry can be sources too. Sources that stay in one place are referred to as stationary sources; sources that move around, such as cars or planes, are called mobile sources.

**Species:** All organisms of a given kind; a group of plants or animals that breed together but are not bred successfully with organisms outside their group.

**Spinning Reserve:** Unloaded generation that is synchronized and ready to serve additional demand (NERC 2009).

**Spring:** A natural discharge of water from a rock or soil to the surface.

**Stability:** The ability of an electric system to maintain a state of equilibrium during normal and abnormal conditions or disturbances (NERC 2009).

**Stability Limit:** The maximum power flow possible through some particular point in the system while maintaining stability in the entire system or the part of the system to which the stability limit refers (NERC 2009).

**State Historic Preservation Officer (SHPO):** Appointed under the authority of the National Historic Preservation Act of 1966, the State Historic Preservation Officer is the official in each state and territory charged with administering national and state historic preservation program at the state level.

**Storm water:** Runoff water resulting from precipitation.

**System Operator:** 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 (NERC 2009).

**Thermal Rating:** 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 2009).

**Till:** An unsorted, unstratified mixture of all sizes of rock material deposited directly by glacial ice with little or no reworking by water (Hobbs and Goebel 1982).

**Topography:** The configuration of a surface, including its relief and the position of its natural and man-made features.

**Toxicity:** A measure of how toxic or poisonous something is.

**Transmission:** 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 2009).

**Transmission Line:** 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 2009).

**Transmission Constraint:** A limitation on one or more transmission elements that may be reached during normal or contingency system operations (NERC 2009).

**Transmission Operator:** The entity responsible for the reliability of its “local” transmission system, and that operates or directs the operations of the transmission facilities (NERC 2009).

**Transmission Provider:** In Minnesota and Wisconsin, MISO (MISO 2010b, 1.672).

**Transmission Planner:** The entity that develops a long-term (generally one year and beyond) plan for the reliability (adequacy) of the interconnected bulk electric transmission systems within its portion of the Planning Authority Area (NERC 2009).

**Viewshed:** Subunits of the landscape where the scene is contained by topography, similar to a watershed.

**Visual resources:** The quality of the environment as perceived through the visual sense; visual resources are evaluated by comparing project features with the major features in the existing landscape; denotes an interaction between a human observer and the landscape he or she is observing.

**Volatile Organic Compounds (VOCs):** Gaseous organic compounds that participate in atmospheric sunlight-induced chemical reactions. Some compounds are specifically listed as exempt due to their having negligible light-induced chemical reactivity. [40 CFR

5 1.100.] Sunlight-induced reactions of VOCs with oxides of nitrogen and sulfur can produce O<sub>3</sub> and PM.

**Water table:** The upper surface of groundwater or that level below which the soil is saturated with water. It is at least 6 in. thick and persists in the soil for more than a few weeks.

**Wetland determination:** The process or procedure by which an area is adjudged a wetland or non-wetland.

**Wetland hydrology:** The sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.

**Wetland soil:** A soil that has characteristics developed in a reducing atmosphere, which exists when periods of prolonged soil saturation result in anaerobic conditions. Hydric soils that are sufficiently wet to support hydrophytic vegetation are wetland soils.

**Wetland vegetation:** The sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. Hydrophytic vegetation occurring in areas that also have hydric soils and wetland hydrology may be properly referred to as wetland vegetation.

**Wetlands:** Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

**Wide Area:** The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnected Reliability Operating Limits (NERC 2009).