

Chapter 10 Glossary and Acronyms

This chapter contains a list of acronyms, abbreviations, and technical terms used in this EIS. Words that would be defined in a desk-size dictionary (for example, the College Edition of the American Heritage Dictionary) are not included.

Acronyms

a-c	alternating current
aMW	Average megawatt
<u>BMP's</u>	<u>Best Management Practices</u>
BPA	Bonneville Power Administration
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
cm	centimeter
CO	carbon monoxide
CO ₂	carbon dioxide
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
dba	decibels (A-weighted)
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
<u>EMI</u>	<u>Electromagnetic Interference</u>
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Policy Act
ft	feet
FYI	For Your Involvement
GIS	Geographic Information System
ha	hectares
IDFG	State of Idaho, Department of Fish and Game

IVM	Integrated Vegetation Management
kV	kilovolt
LVPL	Lower Valley Power and Light, Inc.
m	meter
mG	milligauss
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PCB	Polychlorinated biphenyl
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
RHCA	Riparian Habitat Conservation Area
RI	Radio Interference
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
SVC	Static Var Compensator
SHPO	State Historic Preservation Office
SWPP	Storm Water Pollution Prevention Plan
TSCA	Toxic Substances Control Act
TVI	Television Interference
USBR	U.S. Bureau of Reclamation
USDOE	U.S. Department of Energy
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

VQO	Visual Quality Objectives
WDGF	Wyoming Department of Game and Fish

Technical Terms

Access road - Roads constructed to each structure site first to build the tower and line, and later to maintain and repair it. Access roads are built where no roads exist. Where county roads or other access is already established, access roads are built as short spurs to the structure site. Access roads are maintained even after construction, except where they pass through cultivated land. There, the road is restored for crop production after construction is completed.

Acid rain - Sulfur and nitrogen oxides mix with water drops (snow, rain, and fog) in the atmosphere and make sulfuric and nitric acid. These acids fall to the earth as acid rain or snow. The presence of these compounds in the air can cause respiratory problems and affect visibility.

Airshed - An air supply of a given geographic area, usually defined by topographic barriers or atmospheric conditions that confine air emissions.

Alluvial - Formed by flowing water.

Alternating current (a-c) - An electric current or voltage that reverses direction of flow periodically and has alternately positive and negative values.

Alternatives - Refers to different choices or means to meet the need for action.

Aquifer - Water-bearing rock or sediments below the surface of the earth.

Aspect - The degree of exposure to the sun.

Average megawatts (aMW) - The unit of energy output over a year, equivalent to the energy produced by the continuous operation of one megawatt of capacity over a period of time.

Backdropped - Landscape elements behind facilities; a background setting.

Backline - The line painted on trees (on or off the right-of-way) that encompasses most of the trees that could fall or bend into a transmission line or that the line could swing into. The line is placed where most of the trees inside the line are dangerous to the transmission line and most of the trees outside the line are safe. All the trees inside the backline would be cut (including safe trees). Individual "danger trees" would then be marked and cut outside of the backline. A "full safe" backline is a line that encompasses all the trees mentioned above. In this case the line would be painted around all the "danger trees" and all trees within the line (including safe trees) would be cut.

Bay - A bay is an area set aside in a substation for special equipment.

Best management practices - A practice or combination of practices that are the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

Biodiversity - A measure of the number of different species in a given area; species richness.

Biological Evaluation - The means by which the U. S. Forest Service conducts a review and documents the findings of the affects of an action or proposed action on any sensitive species.

Bus pedestals - Supports that elevate bus tubing within a substation.

Bus tubing - A metal “bar” used to carry electricity from one piece of equipment to another within a substation.

Capacitor - A device to store an electrical charge.

Carbon monoxide (CO) - An odorless and colorless gas formed from one atom of carbon and one atom of oxygen.

Climax - The end point in plant succession when the community will perpetuate itself if the current environmental conditions prevail.

Conductor - The wire cable strung between transmission towers through which electric current flows.

Corona - Corona occurs in regions of high electric field strength on conductors, insulators, and hardware when sufficient energy is imparted to charged particles to cause ionization (molecular breakdown) of the air.

Crossarms - The horizontal supports on a wood pole or steel tower, that support the insulators.

Crossdrains - Channels or dips constructed across a road to intercept surface water runoff and divert it before erosive runoff volumes and concentrations occur.

Culvert - A corrugated metal or concrete pipe used to carry or divert runoff water from a drainage; usually installed under roads to prevent washouts and erosion.

Cumulative impact - Cumulative impacts are created by the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions.

Current - The amount of electrical charge flowing through a conductor (as compared to voltage, which is the force that drives the electrical charge).

Cut and fill - The process where a road is cut or filled on a side slope. The term refers to the amount of soil that is removed (cut) or added (fill).

CWA - Clean Water Act. A federal law intended to restore and maintain the chemical, physical, and biological integrity of the nation’s waters and secure water quality.

Danger trees - Trees (or high growing brush) in or alongside the right-of-way, which are hazardous to the transmission line. These trees are identified by special crews and must be removed to prevent tree-fall into the line or other interference with the wires. The owner of danger trees off the right-of-way is compensated for their value. BPA’s Construction Clearing Policy requires that trees be removed that meet either one of two technical categories: Category A is any tree that within 15 years will grow within about 5 m (18 ft.) of conductors with the conductor at maximum sag (100 ° C or 212 ° F) and swung by 30 kg per sq/m (6 lb per sq/ft.) of wind (93 kph or 58 mph); Category B is any tree or high-growing brush that after 8 years of growth will fall within about 2 m (8 ft.) of the conductor at maximum sag (80 ° C or 176 ° F) and in a static position.

dBA - The first two letters (dB) are an abbreviation for decibel, the unit in which sound is most commonly measured (see decibel). The last letter (A) is an abbreviation for the scale (A scale) on which the sound measurements were made.

Dead ends - Heavy towers designed for use where the transmission line loads the tower primarily in tension rather than compression, such as in turning large angles along a line or bringing a line into a substation.

Debris flows - Rapid movement of water-charged mixtures of soil, rock, and organic debris down steep stream channels.

Decibel - A decibel is a unit for expressing relative difference in power, usually between acoustic signals, equal to 10 times the common logarithm of the ratio of two levels.

Discharge reactor - A device that is used during removal of capacitors from service (bypassing) to control currents to safe levels.

Double-circuit - The placing of two separate electrical circuits on the same tower.

Easement - A grant of certain rights to the use of a piece of land (which then becomes a “right-of-way”). BPA acquires easements for many of its transmission facilities. This includes the right to enter the right-of-way to build, maintain, and repair the facilities. Permission for these activities are included in the negotiation process for acquiring easements over private land.

Electric and magnetic fields (EMF) - The two kinds of fields produced around the electric wire or conductor when an electric transmission line or any electric wiring is in operation.

Emergent - Plants that have their bases submerged in water.

EMI - Electromagnetic interference caused by corona.

Endangered species - Those species officially designated by the U.S. Fish and Wildlife Service that are in danger of extinction throughout all or a significant portion of their range.

Environmental impact statement (EIS) - A detailed statement of environmental impacts caused by an action, written as required by the National Environmental Policy Act.

Exposure assessments - Estimates of the magnetic field levels that people are and will be potentially exposed to.

Feeder - A feeder line is a distribution line that serves certain neighborhoods.

Fiber optics - Special wire installed on the transmission line that is used for communication between one location and another.

Floodplain - That portion of a river valley adjacent to the stream channel which is covered with water when the stream overflows its banks during flood stage.

Footings - The supporting base for the transmission towers. Usually steel assemblies buried in the ground for lattice-steel towers.

Forb - Any herbaceous plant that is not a grass or not grasslike.

Ford - A travelway across a stream where water depth does not prevent vehicle movement. Ford construction can include grading and stabilizing streambanks at the approaches and adding coarse fill material within the channel to stabilize the roadbed.

Foreground - The viewed landscape from 0 to 0.8 km (0 to 0.5 mi.) from an observer.

Gauss - A unit of magnetic induction.

Generation - The power that is produced through some type of power plant.

GIS - Geographic Information System. A computer system that analyzes graphical map data.

Glacial outwash - Materials deposited by glacial meltwaters.

Gneiss -A banded metamorphic rock with the same composition as granite.

Ground wire (overhead) - Wire that is strung from the top of one tower to the next; it shields the line against lightning strikes.

Habitat type - Lands capable of producing similar plant communities at climax.

Herbaceous - A plant having the characteristics of an herb, not woody; or having a green color and a leafy texture.

Hertz (Hz) - The unit of frequency in cycles per second.

H-Frame - Refers to a type of structure usually made of wood, with vertical poles and horizontal crossarms. When erected, it resembles a capital letter H.

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

Insulators - A ceramic or other nonconducting material used to keep electrical circuits from jumping over to ground.

Intermittent - Referring to periodic water flow in creeks or streams.

Jurisdictional wetlands Those areas that are inundated or saturated by surface or ground water 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.

Kilovolt - One thousand volts. (See **Volt**.)

Landslide - Any mass-movement process characterized by downslide transport of soil and rock, under gravitational stress, by sliding over a discrete failure surface; or the resultant landform. Can also include other forms of mass wasting not involving sliding (rockfall, etc.).

Lattice steel - Refers to a transmission tower constructed of multiple steel members that are connected together to make up the frame.

Line losses - The power lost during the transfer of power from one place to another. More power moved over a smaller number of lines increases line loss.

Lithic - Associated with stones or rock.

Lithic Scatters - A prehistoric site, generally lacking cultural features or significant cultural depth, having a surficial scatter of flakes and lithic debris which provide evidence of lithic reduction and/or temporary occupation activities.

Load - The amount of electric power or energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-consuming equipment of customers.

Load growth - Increase in demand for electricity. (See **Load**.)

Loess - Sediment composed of mostly silt-sized particles, deposited by the wind.

Low-gradient - With gentle slopes.

Management prescription - Management practices selected and scheduled for application on a specific area to attain multiple use and other goals and objectives.

Mass failure - An event occurring on steep slopes with physical characteristics that allow failure of stable landforms. Soil properties may include low permeability, high water content, and high slope resulting in large scale failure and movement of surface material.

Mass movement - The dislodgment and downhill transport of soil and rock materials under the direct influence of gravity. Includes movements such as creep, debris torrents, rock slides, and avalanches.

Mass wasting - The slow downward slope of rock debris.

Megawatts (MW) - A megawatt is one million watts, or one thousand kilowatts; an electrical unit of power.

Metric ton - Equivalent to 1000 kilograms or 2,205 pounds.

Milligauss - A unit used to measure magnetic field strength. One-thousandth of a gauss.

Mitigation - Steps taken to lessen the effects predicted for each resource, as potentially caused by the transmission project. They may include reducing the impact, avoiding it completely, or compensating for the impact. Some mitigation, such as adjusting the location of a tower to avoid a special resource, is taken during the design and location process. Other mitigation, such as reseeding access roads to desirable grasses and avoiding weed proliferation, is taken after construction.

National Environmental Policy Act (NEPA) - This act requires an environmental impact statement on all major Federal actions significantly affecting the quality of the human environment. [42 U.S.C. 4332 2(2)(C).]

NESC - National Electrical Safety Code

1994 Dollars - Assumptions about inflation, cost of equipment, interest rates, used by analysts in 1994 to determine the cost of system plans so that they could be evaluated.

Nitrogen oxides - A group of compounds consisting of various combinations of nitrogen and oxygen atoms.

Non-attainment - An area which does not meet air quality standards set by the Clean Air Act for specified localities and periods.

Nonrenewable - Not capable of replenishing.

Noxious weeds - Plants that are injurious to public health, crops, livestock, land or other property.

Oil spill containment - Units installed in a substation to collect oil spilled from equipment.

100-year Floodplain - Areas that have a 1 percent chance of being flooded in a given year. (See Floodplain.)

Outage - Events caused by a disturbance on the electrical system, that requires BPA to remove a piece of equipment or a portion or all of a line from service. The disturbances can be either natural or human-caused.

Overload - Moving too much current flow over transmission facilities. Equipment has safeguards: in the event of overloading of the system, switches will disconnect sensitive equipment from the flow of electricity.

Partial retention - The VOO that applies to areas where activities may be evident but must remain subordinate to the natural landscape. These visually sensitive areas are along major state and federal highways, wild and scenic river corridors, and other high public use areas.

Particulate matter (PM) - Airborne particles including dust, smoke, fumes, mist, spray, and aerosols.

Perennial - Streams or creeks with year-round water flow.

Permeable - Capable of transporting liquids.

Phase - A conductor or conductors or piece of electrical equipment that is associated with one of three separate phases of an alternating-current power system, designated A-phase, B-phase, and C-phase.

Piedmont - Lying along or near the foot of a mountain range.

Polychlorinated biphenyl (PCB) - Oily, persistent substance formerly manufactured for use in electrical equipment, primarily as a dielectric in capacitors. Banned from use in 1979 after research showed that PCBs cause skin disease and liver damage, and are a suspected carcinogen.

Power circuit breakers - A switch, installed at a substation, which breaks or restores the flow of current through the line.

Preservation - The VQO that applies to wilderness and other special areas where the natural landscape should be unaltered by forest management activities.

Prime and unique farmland - Prime farmland is land with the best combination of physical and chemical characteristics for producing food and other agricultural crops. Unique farmland is land other than prime farmland that is used to produce specific high-value food and fiber crops. It also has special characteristics to economically produce sustained high quality or high yields of specific crops.

Project Plan - A Project Plan is permanent documentation of agreements made between land managers (in this case BPA and the USFS). The Plan identifies methods for improving or creating roads, clearing trees and other vegetation, erosion control, fire control, protection of special resources, and mitigation.

Province - An area of land less extensive than a region and having a characteristic plant and animal population.

Pulling site - The site where the machinery used to string the conductors is staged.

Reactor - A device to introduce inductive reactance in a system.

Record of Decision (ROD) - The document notifying the public of a decision taken on a Federal action, together with the reasons for the choices entering into that decision. The Record of Decision is published in the *Federal Register*.

Retention - The VQO that applies to areas where activities should not be evident to the casual forest visitor.

Revegetate - Reestablishing vegetation on a disturbed site.

Right-of-way (ROW) - An easement for a certain purpose over the land of another, such as a strip of land used for a road, electric transmission line, pipeline, etc.

Rill - A rill is a channel made by a small stream.

Riparian habitat - The zone of vegetation which extends from the water's edge landward to the edge of the vegetative canopy. Associated with watercourses such as streams, rivers, springs, ponds, lakes, or tidewater.

Riprap - Broken stones put in areas to prevent erosion, especially along river and stream banks.

Roadless Areas — Areas of National Forest land that qualify for placement on the inventory of potential wilderness. In addition to meeting the statutory definition of wilderness, they meet one or more of the following criteria: they contain 5,000 acres or more; they are smaller but are manageable in their natural condition, are self-contained ecosystems, or are contiguous to existing wilderness, primitive areas or roadless areas; or they do not contain improved roads maintained for travel by standard passenger-type vehicles, except as permitted in areas east of the 100th meridian.

Scoping - A part of the NEPA process where significant issues to be analyzed in detail in the environmental document are identified.

Seismic - Earthquake activity.

Sensitive species - Those plants and animals identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trend in populations or density and significant or predicted downward trend in habitat capability.

Series capacitors - Electrical devices that can increase loading on a transmission line. Used to increase the capability of interconnections and to achieve the most advantageous and economical division of loading between lines.

Silt - Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 mm) to the lower limit of very fine sand (0.05 mm).

Single-circuit - A line with one electrical circuit on the same tower.

Slash - Debris left over from felling trees.

Slash windrows - Rows of slash or cut vegetation placed on the side of an access road to control erosion.

Slump - Deep, rotational landslide, generally producing coherent movement (back rotation) of blocks over a concave failure surface. Typically, slumps are triggered by the buildup of pore water pressure in mechanically weak materials (deep soil or clay-rock rock).

Sole source aquifer - An aquifer designated by the Environmental Protection Agency which provides at least half of an area's drinking water.

Species - A group of interbreeding individuals not interbreeding with another such group; similar, and related species are grouped into a genus.

Structure - Refers to a type of support used to hold up transmission or substation equipment.

Subsoiling - Breaking up compacted soils, without inverting them, using a plow or blade.

Substation - The fenced site that contains the terminal switching and transformation equipment needed at the end of a transmission line.

Substation dead ends - Dead end towers within the confines of the substation where incoming and outgoing transmission lines end. Dead ends are typically the tallest structures in a substation.

Substation fence - The chain-link fence with barbed wire on top provides security and safety. Space to maneuver construction and maintenance vehicles is provided between the fence and electrical equipment.

Substation rock surfacing - An 8-cm (3-in.) layer of rock selected for its insulating properties is placed on the ground within the substation to protect operation and maintenance personnel from electrical danger during substation electrical failures.

Sulfur oxides - Various combinations of sulfur and oxygen; one of the most common being sulfur dioxide, which is a gas at normal temperatures and pressures in the atmosphere. Sulfur oxides combine with particulates and moisture to produce acid rain.

Switches - Devices used to mechanically disconnect or isolate equipment; found on both sides of circuit breakers.

System reliability - The ability of a power system to provide uninterrupted service, even while that system is under stress.

Tackifiers - A water-based agent used to bind soil particles together to provide erosion protection.

Talus - Rock debris that has accumulated at the base of a cliff or steep slope.

Tap - The point at which a transmission line is connected to a substation or other electrical device to provide service to a local load.

Threatened species - Those species officially designated by the U.S. Fish and Wildlife Service that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Thyristor - Thyristors are semiconductor switches. Three valves would be installed between the transformer and the reactors.

Tower - See **Structure**.

Traditional Cultural Properties - A traditional cultural property is defined generally as one that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs (e.g., traditions, beliefs, practices, lifeways, arts, crafts, and social institutions) of a living community that are rooted in that community's history, and are important in maintaining the continuing cultural identity of the community.

Transformers - Electrical equipment usually contained in a substation that is needed to change voltage on a transmission system.

Transmission dead end towers - The last transmission line towers on both the incoming and outgoing sides of the substation. These towers are built extra strong to reduce conductor tension on substation dead ends and provide added reliability to the substation.

Transmission line - The structures, insulators, conductors, and other equipment used to transmit electrical power from one point to another.

Undesirable Plants - Plants that are injurious to public health, crops, livestock, land or other property. (See **Noxious Weeds**.)

Volatile organic compounds (VOC) - Compounds containing carbon that evaporates readily at normal room temperature and pressure. VOCs react with sunlight to form ozone.

Volt - The international system unit of electric potential and electromotive force.

Voltage - The driving force that causes a current to flow in an electrical circuit.

Water bars - Smooth, shallow ditches excavated at an angle across a road to decrease water velocity and divert water off and away from the road surface.

Wetlands - An area where the soil experiences anaerobic conditions because of inundation of water during the growing season. Indicators of a wetland include types of plants, soil characteristics and hydrology of the area.

Wild and Scenic River - A river within the national wild and scenic river system that offers outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act of 1968 for preservation of their free-flowing condition.

Wilderness — Areas designated by congressional action pursuant to the Wilderness Act that are managed for primeval characteristics, solitude or unconfined primitive recreation, natural conditions and where the imprint of humans is substantially unnoticeable. The land must be primarily affected

by the forces of nature, have outstanding opportunities for solitude or primitive recreation, be at least 5000 acres in size, and may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Yo-yo skiing - Yo-yo skiing is shuttle skiing at Teton Pass. Skiers leave one car in Wilson at the bottom of the Pass and drive another car to the top of the Pass. After skiing down the hill, they use the second car to drive back up to the top of the Pass.

