

APPENDIX I

Glossary

°F	Degrees Fahrenheit.
µg/m ³	Micrograms per cubic meter.
3-D	Three dimensional.
AAC	All-aluminum conductor.
AAQS	Ambient Air Quality Standards.
ABAG	Association of Bay Area Governments.
ac	Alternating current.
ACS	American Cancer Society.
ACSS	Association of California State Supervisors.
ADPA	Archaeological Data Protection Act.
Airborne sound	Sound that travels through the air, as opposed to structure-borne sound.
AL	Aluminum.
AMA	American Medical Association.
Ambient noise	The prevailing general noise existing at a location or in a space, which usually consists of a composite of sounds from many sources, near and far.
APE	Areas of potential effect.
ARPA	Archaeological Resources Protection Act.
Average	As a measure, the sum of the measurements (over a specified period) divided by the number of measurements.
BAAQMD	Bay Area Air Quality Management District.
Backfill	Earth that is replaced after a construction excavation.
Backhoe	A self-propelled machine with an arm equipped with a toothed shovel that scoops earth as the shovel is pulled toward the machine.
Bank	An aggregation of similar devices (e.g., transformers, lamps) connected together and used in cooperation. <i>Note:</i> In automatic switching, a bank is an assemblage of fixed contacts over which one or more wipers or brushes move in order to establish electric connections.

Bank connection	Location of the connection point to the bank.
BART	Bay Area Rapid Transit.
BMP	Best Management Practices.
Bore	(rotating machinery) The surface of a cylindrical hole.
Bore pit	Pit associated with a given bore.
Breaker	A switch that automatically interrupts an electric circuit under an infrequent abnormal condition .
Bus	A conductor or group of conductors that serve as a common connection for two or more circuits.
Bus bay	Location of the bus.
Bus parallel	(also called: line substitute breaker) Refers to a breaker connected to two buses. Typically, a line substitute breaker serves as a substitute during breaker maintenance (on the bus), and will serve the load.
Cable terminations	(cable terminal) A device that seals the end of a cable and provides insulated egress for the conductors.
Caltrans	California Department of Transportation.
Capacitance	The property of a system of conductors and dielectrics that permits the storage of electrically separated charges when potential differences exist between the conductors.
Capacitor	(condenser) A device, the primary purpose of which is to introduce capacitance into an electric circuit. Capacitors are usually classified according to their dielectrics (e.g., air capacitors, mica capacitors, paper capacitors).
Capacitor banks	(shunt power capacitors) An assembly at one location of capacitors and all necessary accessories (e.g., switching equipment, protective equipment, controls) required for a complete operating installation. It may be a collection of components assembled at the operating site or may include one or more pieces of factory-assembled equipment.
CARB	California Air Resources Board.
CDFG	California Department of Fish and Game.
CDMG	California Division of Mines and Geology.
CEE	Customer Energy Efficiency.
CEQA	California Environmental Quality Act.
CESA	California Endangered Species Act.
cfs	Cubic feet per second.

Class III Disposal	Class III Commercial landfills can accept Commercial Wastes and Approved Industrial Wastes.
CNDDDB	California Natural Diversity Data Base.
CNEL	Community Noise Equivalent Level. The L_{eq} of the A-weighted noise level over a 24-hour period, with a 5 dB penalty applied to noise levels between 7 p.m. and 10 p.m., and a 10 dB penalty applied to noise levels between 10 p.m. and 7 a.m.
CO	Carbon monoxide.
Conductor	A material capable of transmitting another form of energy.
Conductor sags	The deflection of the conductor due to its own weight.
Conduit	A pipe, tube, or tile for protecting electric wires or cables.
Conduit bank	Group of conduits.
CPCN	Certificate of Public Convenience and Necessity.
CPUC	California Public Utilities Commission.
Crane Outrigger Pads	The stabilizing square of material that is located between the outrigger and the ground (or block) on which the outrigger rests. The “foot” on a crane outrigger.
CRHR	California Register of Historic Resources.
Crossarms	A horizontal member (usually wood or steel) attached to a pole, post, tower, or other structure, which is equipped with means for supporting the conductors.
Cross-linked	Refers to the chemical makeup of electrical insulation.
CSA	Council on Scientific Affairs.
CUPAs	California Unified Program Agencies.
Current	The rate of flow of an electric charge.
CWA	Clean Water Act.
dB	Decibel. The decibel is a measure, on a logarithmic scale, of the magnitude of a particular quantity (e.g., sound pressure, sound power, and sound intensity) with respect to a standardized quantity.

dBA	Decibel A-weighted. The sound-pressure level, in decibels, as measured on a sound-level meter using the internationally standardized A-weighting filter, or as computed from sound spectral data to which A-weighting adjustments have been made. A-weighting de-emphasizes the low and very high-frequency components of the sound in a manner similar to the response of the average human ear. A-weighted sound levels correlate well with subjective reactions of people to noise and are universally used for community noise evaluations.
dc	Direct current.
Dead-end tower	Type of tower configuration used at heavy-angle points and at positions along the tower line to separate long straight sections of towers. These towers are required to maintain clearances between the energized conductor and the steel tower body. The towers are considerably heavier and stronger to withstand a structure failure along the line on either side of the dead end.
DHS	Department of Health Services.
Dielectric	Substance that is a poor conductor of electricity and will sustain the force of an electric field passing through it. Also called an insulator.
Double-circuit system (protective signaling)	To place two separate electrical circuits (for alternating current, each circuit consists of three separate conductors or bundles of conductors) on the same transmission structures.
DPA	Distribution planning area.
Drilled pier	A pier system that is used when “poured in place concrete piers” are required. In areas where pier placement is necessary, technicians dig holes, then drill shafts. Rebar is placed in the holes and the shafts are filled with wet concrete.
Duct Bank	A bank of ducts. Ducts are 1) Tubes through which heated or cooled air flows. 2) Enclosures through which cabling in a substation passes.
DWR	Department of Water Resources.
EIR	Environmental Impact Report.
EMF	Electric and magnetic fields.
Emission	Unwanted substances released by human activity into air or water.
EPA	Environmental Protection Agency.
ESA	Endangered Species Act.
ESA	Environmentally sensitive area.
Extruded dielectric	An insulating material manufactured by an extrusion process.

FEMA	Federal Emergency Management Agency.
Frequency	The number of oscillations per second of a periodic noise (or vibration) expressed in Hertz (Hz).
g	Gravity.
General Order 95	CPUC safety rule relating to utility work.
Generation	The production of electricity from other forms of energy (e.g., combustion, falling water, or thermal transfer).
GGF	Grid-generating facility.
GIS	Geographic Information System.
Grillage	Tower footing made of framework of galvanized steel, with wide-flange beams and channels. Attached to footing stub angle and attaching leg extension.
Ground grid	A system of grounding electrodes consisting of interconnected bare cables buried in the earth to provide a common ground for electric devices and metallic structures.
HCP	Habitat Conservation Plan.
High-side bus	The high voltage side of electrical equipment.
Horizontal dry boring	Steerable method for the installation of pipes, conduits and cables in a shallow arc using a surface launched drilling rig.
Hz	Hertz. A unit of electromagnetic wave frequency that is equal to one cycle per second.
HZ-1 cable	HZ-1 cable is the name of the 230kV underground cable line that runs from Martin Substation (San Francisco "H") to Embarcadero Substation (San Francisco "Z"). The second 230kV circuit that runs from Martin to Embarcadero is called HZ-2.
IEEE	Institute of Electrical and Electronics Engineers.
Inductance	The property of an electric circuit by which a varying current induces an electromotive force in that circuit or in a neighboring circuit.
Insulator	A material that is a poor conductor of electricity. A device made of an electrical insulating material and used for separating or supporting conductors.
ISO	California Independent System Operator.
kcmil	Circular mills, expressed in thousands.
km	Kilometers.
kV	Kilovolt.

LCS	Local capability service.
L _{dn}	Day-night sound level. The L _{eq} of the A-weighted noise level, over a 24-hour period, with a 5 dB penalty applied to noise levels between 7 p.m. and 10 p.m., and a 10 dB penalty applied to noise levels between 10 p.m. and 7 a.m.
L _{eq}	Energy-equivalent level. The level of a steady noise that would have the same energy as the fluctuating noise level integrated over the time period of interest. L _{eq} is widely used as a single-number descriptor of environmental noise. L _{eq} is based on the logarithmic or energy summation, and it places more emphasis on high noise-level periods than does L ₅₀ or a straight-arithmetic average of noise level over time. This energy average is not the same as the average sound pressure levels over the period of interest, but must be computed by a procedure involving summation or mathematical integration.
Lightning arresters	(Surge arrester) A protective device for limiting surge voltages on equipment by discharging or bypassing surge current. It prevents continued flow of follow current to ground, and is capable of repeating these functions as specified.
Line trap	(Carrier-current line trap) A network of inductance and capacitance inserted into a power line that offers a high impedance to one or more carrier-current frequencies and a low impedance to power-frequency current.
Load dropping	During extreme peak-demand periods, utilities can shed load or take customers off the grid based on previously agreed-to terms. Certain industrial users can alter their peak-usage periods to accommodate the overall system needs. Generally, they postpone certain operations to other times within the day to soften the total usage at peak-demand periods.
Load/Demand	Total of the electrical customers connected to an electrical grid. Normally expressed in megawatts (MW), 1 MW equals 1000 kW, or 1,000,000 watts. A normal household light bulb is usually rated at 100 watts. This loading varies daily and is seasonal, depending on the temperature characteristics of the service territory.
M	Magnitude.
mA	Milliamperes.
M _b	Magnitude (body wave).
MBTA	Migratory Bird Treaty Act.
MCE	Maximum credible earthquake.
mG	Milligauss.

mg/L	Milligrams per liter.
mgd	Million gallons per day.
MHz	Megahertz.
mJ	Millijoules.
M _L	Magnitude (Richter).
MOAS	Motor Operated Air Switches.
MP	Mile Post.
mph	Miles per hour.
MRZ	Mineral resource zone.
M _s	Magnitude (surface wave).
msl	Mean sea level.
MVA	Megavoltamperes. A voltampere (VA) is the basic unit of measure of apparent power in an electric circuit. It is the product of voltage (volts) and current (amps) in a circuit. VA equals volts multiplied by amperes. Apparent power is usually measured in kilovoltamperes (kVA)—or one thousand voltamperes, or in MVA—one million voltamperes.
M _w	Moment magnitude.
MW	Megawatt. A measure of electric power. One thousand kilowatts or one million watts.
NAGPRA	Native American Graves Protection and Repatriation Act.
NCDC	National Climatic Data Center.
NEPA	National Environmental Policy Act.
NERC	North American Electric Reliability Council.
NHPA	National Historic Preservation Act.
NO ₂	Nitrogen dioxide.
NOI	Notice of Intent.
NO _x	Oxides of Nitrogen.
NPDES	National Pollutant Discharge Elimination System.
NRHP	National Register of Historic Places.

Octave Band— 1/3 Octave Band	One octave is an interval between two sound frequencies that have a ratio of two. For example, the frequency range of 200 Hz to 400 Hz is one octave, as is the frequency range of 2,000 Hz to 4,000 Hz. An octave band is a frequency range that is one octave wide. A standard series of octaves is used in acoustics, and they are specified by their center frequencies. In acoustics, to increase resolution, the frequency content of a sound or vibration is often analyzed in terms of 1/3 octave bands, where each octave is divided into three 1/3 octave bands.
Ohms	A unit of measure of electrical resistance. One volt can produce a current of one ampere through a resistance of one ohm.
OHW	Ordinary high water.
OPGW	Optical ground wire. A shield wire that also contains fiber optics, used for line protection/communication.
Parallel	Two-terminal elements are connected in parallel when they are connected between the same pair of nodes.
Parallel breaker	Two or more breakers connected electronically in parallel.
Pb	Lead.
PEA	Proponent's Environmental Assessment.
Peak demand	The electric load on any system is arbitrarily divided into four categories: 1) Minimum load, which is the single-lowest level of demand a utility has met and defines the portion of the load that is met 100 percent of the time; 2) Intermediate load, which is the level of demand that a utility has met between 25 and 85 percent of the time; 3) Peak load, which is met approximately 25 percent of the time; and 4) Maximum load, which is the single highest load met during any interval.
PG&E	Pacific Gas and Electric Company.
PGA	Peak ground acceleration.
PLM	Peak load management.
PM ₁₀	Particular matter or fugitive dust.
Polyethylene	A polymer of ethylene. <i>Especially</i> : any of various partially-crystalline lightweight thermoplastics (CH ₂ CH ₂) _x that are resistant to chemicals and moisture, have good insulating properties, and are used in insulation.
ppb	Parts per billion.
ppm	Parts per million.
PVC	Polyvinyl chloride.

Ring-bus	An arrangement of circuit breakers in a substation that has one breaker for each line position, with a single bus closing back on itself, to form a ring (two breakers must be opened to clear or isolate a fault. Taking a line or breaker out of service requires opening the ring, limiting the application of this scheme usually to four to six positions).
Riser structures	The extended section of a lamp stand or century stand.
ROG	Reactive organic gases.
ROW	Right-of-way.
RWQCB	Regional Water Quality Control Board.
SCS	Soil Conservation Service.
Sectionalizing breakers	Refers to breakers that normally sectionalize a substation buses.
SF ₆	Sulfur hexafluoride gas.
Sheaves	Sheaves are rollers attached to the lower end of the insulators that are, in turn, attached to the ends of each supporting-structure cross arm. The sheaves allow the individual conductors to be pulled through each structure, until the conductors are ready to be pulled up to the final tension position.
Shield wire	Normally, one or two conducting wires that are placed at the very top of tower lines, above the circuits carrying the system electricity. The shield wire(s) are not a component of the electrical grid, but are used to protect the grid wires from electric shock from lightning strikes. Should lightning strike the shield wire, the electromotive force travels along the shield wire and through the tower along a grounding link and into the ground. This allows the lightning strike to find a pathway to the ground and not disturb the current flow in the grid circuit.
Single Bus	A conductor that serves as a common connection for two or more circuits and is used to interconnect equipment of the same voltage.
SLR	Single-lens reflex.
SO ₂	Sulfur dioxide.
Sock line	A small cable, used to pull in the conductor.

Solid dielectric cable	A type of underground cable where the cooling medium used is the air around the wire within its polyvinyl-chloride (PVC) encasement. It has specially-designed thermal backfill within and around the cable array. The other type of high-voltage underground-cable systems are known as Low-Pressure Oil-Filled (LPOF) systems. An LPOF system is considerably more complicated, because it uses a contained-piping system filled with cooling oil to prevent the conductor cable from overheating. This requires oil-reservoir and pumping stations at intervals along the cable route. In the event of an accidental digging, the LPOF system is extremely time-consuming to repair.
Sound-pressure level (SPL)	The sound-pressure level of sound in decibels is 20 times the logarithm to the base of 10 of the ratio of the RMS value of the sound pressure to the RMS value of a reference sound pressure. The standard reference sound pressure is 20 micro-Pascals as indicated in ANSI S1.8-1969, "Preferred Reference Quantities for Acoustical Levels."
Sound-transmission class (STC)	STC is a single-number rating, specified by the American Society for Testing and Materials, which can be used to measure the sound-insulation properties for comparing the sound-transmission capability, in decibels, of interior building partitions for noise sources (e.g., speech, radio, and television). It is used extensively for rating sound-insulation characteristics of building materials and products.
SPCC	Spill prevention, control, and countermeasures.
Splice	The physical connection of two or more conductors to provide electrical continuity.
Splice trailer	Trailer, containing splices.
Splice vaults	Vault, containing splices.
Spread footing	Platform which gives stability to foundation wall or other structure.
Staging site	Place for contractor to set up for work.
Statistical distribution terms	L_{50} is a statistical descriptor of the typical average background noise (or vibration) levels observed during a measurement period, normally made up of the summation of a large number of sound sources distant from the measurement position and not usually recognizable as individual-noise sources. Generally, the prevalent source of this residual noise is distant street traffic. L_{50} is not strongly influenced by occasional local motor-vehicle pass-byes. However, it can be influenced by stationary sources, such as air-conditioning equipment.
Structure-borne sound	Sound propagating through building structure. Rapidly fluctuating elastic waves in structures (e.g., gypsum board, joists, and studs).

Substation	(Transmission and distribution) An assemblage of equipment for purposes other than generation or utilization, through which electric energy in bulk is passed for the purpose of switching or modifying its characteristics. Service equipment, distribution-transformer installations, and other minor distribution or transmission equipment are not classified as substations.
Surge	A transient water of current, potential, or power in the electric circuit.
Switchable series line reactor	A line reactor, connected in series, which is switchable in and out of circuit.
Switchgear sets	A term covering switching and interrupting devices and their combination with associated control, instrumentation, metering, regulating, and protective devices and associated interconnections.
SWPPP	Storm Water Pollution Prevention Plan.
SWRCB	State Water Resources Control Board.
Tap	Available connection that permits changing the active portion of the device.
Transformer	A device employing the principle of mutual induction to convert variations of current in a primary circuit into variations of voltage and current in a secondary circuit.
Transition station	Electrical facility and equipment where overhead conductor is transitioned to underground conductor in duct bank.
Transmission	A general term for the process by which incident flux leaves a surge or medium on a side other than the incident side.
Two-by-two duct bank configuration	Configuration of a duct bank that involves placement of four conductor wires.
Underground circuit series reactor	Device that adds series impedance.
USACE	U.S. Army Corps of Engineers.
USC	United States Code.
USDA	U.S. Department of Agriculture.
USFWS	U.S. Fish and Wildlife Service.
USGS	United States Geological Survey.
UST	Underground storage tank.
Vibration dampers	A device attached to a conductor to prevent damage caused by wind-induced vibration.

Voltage	Electric potential, or potential difference between two points in a conducting wire. Electromotive force equivalent to the pressure that causes water to flow in a pipe.
WAPA	Western Area Power Administration.
WGCEP	Working Group on California Earthquake Probabilities.
XLPE	Cross-linked polyethylene.