

10. GLOSSARY

Term	Definition
“A-weighted” Scale	Assigns a weight to sound frequencies that is related to how sensitive the human ear is to each sound frequency. Frequencies that are less sensitive to the human ear are weighted less than those for which the ear is more sensitive. A-weighted measurements indicate the potential damage a noise might cause to hearing.
Ambient Noise	Background noise associated with a given environment. Ambient noise is typically formed as a composite of sounds from many near and far sources, with no particular dominant sound.
Aquifer	Body of rock or sediment that is capable of transmitting groundwater and yielding <i>sufficient</i> quantities of water to wells or springs.
Arterial Highway	Highway generally characterized by its ability to quickly move a relatively large volume of traffic, but often with restricted capacities to serve abutting properties. The arterial system typically provides for high travel. The rural and urban arterial highway systems are connected to provide continuous through movements.
Attenuate	To lessen the amount of force, magnitude, or value of something.
Best Management Practice	Method for preventing or reducing the pollution resulting from an activity. Best Management Practice (BMP) includes non-regulatory methods designed to minimize harm to the environment.
Blowdown	Minimum discharge of recirculating water to discharge materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practice.
Blowdown Water	Portion of circulating cooling tower water removed to maintain the amount of dissolved solids and other impurities at an acceptable level. Because blowdown water is an industrial wastewater, it is essential to mitigate the potential environmental impact by reducing the volume and hazardous makeup of blowdown water.
Brackish Water	Water that is saltier than fresh water, but less than seawater. Salt content of brackish water is between 0.5 and 30 parts per thousand.
Carbon Dioxide	Greenhouse gas created by combustion and emitted primarily from human activity such as the burning of fossil fuels to generate electricity and operate vehicles, abbreviated CO ₂ .
Class I Railroad	Railroad with operating revenues exceeding \$277.5 million.

Term	Definition
Class I Truck Route	Limited access divided highway that can handle five-axle tractor semi trailers up to 8.5 feet (2.6 meters) wide, up to 13.5 feet (4 meters) high, of any length, and with a gross weight up to 80,000 pounds (36,000 kilograms).
Class II Railroad	Railroad with operating revenues greater than \$20.5 million but less than \$277.5 million for at least three consecutive years.
Class II Truck Route	Roadway that allows 80,000-pound (36,000-kilogram) vehicles up to 60 feet (17 meters) long with a width of 8.5 feet (2.6 meters).
Class III Railroad	Railroad with less than \$10 million in operating revenue; typically short in length.
Class III Truck Route	Roadway that allows 80,000-pound (36,000-kilogram) vehicles up to 60 feet (17 meters) long with a width of 8 feet (2.5 meters).
Clean Water Act	Primary federal law governing water pollution. The Clean Water Act's (CWA's) goals include eliminating toxic substance releases to water, eliminating additional water pollution, and ensuring that surface waters meet standards necessary for human sports and recreation (see <i>National Pollutant Discharge Elimination System</i>).
Coal Combustion Products	Incombustible by-products generated in coal-burning industrial facilities. The by-products are generated in various steps of the process. Coal combustion products (CCPs) generated in the boilers or furnaces are ash and slag. Other by-products such as fly ash and synthetic gypsum are collected from the emission control systems.
Collector Route	Low or moderate-capacity route which does not provide a highway or arterial road level of service. A collector route often leads traffic to arterial roads or directly to highways. Occasionally a collector route will fill gaps in a grid system between arterial roads. Traffic volumes and speeds are typically lower than those of arterial highways.
Combined Cycle	Combination of two or more thermodynamic cycles in a chemical process, usually for power generation.
Conceptual Site Model	Summary of a site's conditions that identifies the type and location of all potential contamination sources and how and where people, plants, or animals may be exposed.
Continuous Equivalent Sound Level	Steady-state decibel level which would produce the same A-weighted sound energy over a stated period of time as an equivalent sound over time.

Term	Definition
Corona Noise	Noise caused by partial discharges on insulators and in air surrounding electrical conductors of overhead power lines. Corona noise level is dependent on weather conditions.
Cultural Resources	Archaeological sites, historical sites (e.g., standing structures), Native-American resources, and paleontological resources.
Day-night Equivalent Sound Level	A-weighted equivalent decibel level for a 24-hour period with an additional 10-dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10 pm to 7 am).
Decibel	Unit used to convey intensity of sound, abbreviated (dB).
Deep Ocean Sequestration	Deliberate injection of captured CO ₂ into the ocean at great depths where it could potentially be isolated from the atmosphere for centuries. While the technologies currently exist to directly inject CO ₂ into the deep ocean, the knowledge base is inadequate to determine what biological, physical, or chemical impacts might occur from interactions with the marine ecosystem.
Deep Saline Aquifer	Deep underground rock formation composed of permeable materials and containing highly saline fluids.
Density	Ratio of a substance's weight relative to its volume.
Dissolution	Process of dissolving a substance into a liquid.
Effluent	Waste stream flowing into the atmosphere, surface water, groundwater, or soil.
End Moraines	Irregular ridges of glacial sediments that formed at the margin or edge of the ice sheet.
Endangered Species	Plants or animals that are in danger of extinction. A federal list of endangered species can be found in 50 CFR 17.11 (wildlife), 50 CFR 17.12 (plants), and 50 CFR 222.23(a) (marine organisms). Illinois maintains its list of endangered species with the Illinois Endangered Species Protection Board and Texas maintains its list with the Texas Parks and Wildlife Department.
Exergy	Amount of energy available to perform useful work ("exergy" is also known as "availability").
Floodplain	Flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding.
Frequency	The number of cycles of completed occurrences per unit of time of a sound wave, most often measured in Hertz.

Term	Definition
Fuel Cell	Electrochemical cell in which the energy of a reaction between a fuel, such as liquid hydrogen, and an oxidant, such as liquid oxygen, is converted directly and continuously into electrical energy.
Fujita Scale	Standard metric to qualitatively identify the intensity of a tornado based on the damage caused. There are seven categories that range from F0 (weak) to F6 (violent). Each category represents a qualitative level of damage and an estimated range of sustained wind speed delivered by the tornado.
Gasification	Conversion process to gas or a gas-like phase.
Geologic Sequestration	CO ₂ capture and storage in deep underground geologic formations.
Greenhouse Gas	Gas that contributes to the greenhouse effect by absorbing infrared radiation and ultimately warming the atmosphere. Greenhouse gases include water vapor, nitrous oxide (NO _x), methane, CO ₂ , ozone (O ₃), halogenated fluorocarbons, hydrofluorocarbons, and perfluorinated carbons.
Ground Moraine	Rolling-to-flat landscape that forms under an ice sheet.
Hazardous Waste	Waste that exhibits at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or that is specifically listed by the U.S. Environmental Protection Agency as a hazardous waste. Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA) Subtitle C.
Heat Rate	Amount of heat required (usually in Btu) to produce an amount of electricity (usually in kW-hr).
Historic Property	Prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.
Indirect Job	Job created or sustained from a project's purchase of goods and services from businesses in a region.
Induced Job	Job created or sustained when wage incomes of those employed in direct and indirect jobs are spent on the purchase of goods and services in a region.
Industrial Process Waste	Any liquid, solid, semisolid, or gaseous waste generated when manufacturing a product or performing a service. Examples include cutting oils; paint sludges; equipment cleanings; metallic dust sweepings; used solvents from parts cleaners; and off-specification, contaminated, or recalled wholesale or retail products. The following wastes are not industrial process wastes: uncontaminated packaging materials, uncontaminated machinery components, general household waste, landscape waste, and construction or demolition debris.

Term	Definition
Integration	Organization or structure so that constituent units function cooperatively.
Koppen Climate Classification	Most widely used system to classify world climate regions based on annual and monthly averages of temperature and precipitation.
Level of Service	Measure of traffic operation effectiveness on a particular roadway facility type.
Local Roads	Public roads and streets not classified as arterials or collectors are classified as local roads. Local roads and streets are characterized by the many points of direct access to adjacent properties and the relatively minor value in accommodating mobility. Speeds and volumes are usually low and trip distances short.
Low Income Population	A community that has a proportion of low-income population greater than the respective average. Low income populations in an affected area should be identified with the annual statistical poverty thresholds from Bureau of the Census Current Population Reports, Series P-60, Income and Poverty.
Mean Sea Level	Average ocean surface height at a particular location for all stages of the tide over a specified time interval (generally 19 years).
Megawatt	Unit of power equal to one million watts. A power plant with 1 megawatt (MW) of capacity operating continuously for a year could supply electricity to approximately 750 households.
Mineral Sequestration	Process of CO ₂ reacting with metal oxide bearing materials to form insoluble stable carbonates. Mineral sequestration's main economic challenge is the extremely slow reaction process of naturally occurring minerals with CO ₂ .
Minority	Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.
Minority Population	Identified where either the affected area's minority population exceeds 50 percent or the affected area's minority population percentage is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
Miscible	Property of liquids that allows them to be mixed together and form a single homogeneous phase.
Monitoring, Mitigation, and Verification	Capability to measure the amount of CO ₂ stored at a sequestration site, monitor the site for leaks, to verify that the CO ₂ is stored in a way that is permanent and not harmful to the host ecosystem, and to respond to CO ₂ leakage or ecological damage in the unlikely event that it should occur. Monitoring, mitigation, and verification (MM&V) applies to geologic sequestration and terrestrial sequestration.

Term	Definition
Moraine	Rock debris, fallen, or plucked from a mountain and transported by glaciers or ice sheets (see <i>Ground Moraine</i>).
National Energy Policy	The National Energy Policy (NEP), developed by the National Energy Policy Development Group in 2001 with members of the President's cabinet, is based on three principles: provide a long-term, comprehensive energy strategy; advance new, environmentally-friendly technologies to increase energy supplies and encourage cleaner, more efficient energy use; and seek to raise the living standards of the American people, recognizing that to do so our country must fully integrate its energy, environmental, and economic policies.
National Environmental Policy Act	Signed into law on January 1, 1970, the National Environmental Policy Act (NEPA) declared a national policy to protect the environment and created the Council on Environmental Quality (CEQ) in the Executive Office of the President. To implement the national policy, NEPA requires that environmental factors be considered when federal agencies make decisions, and that a detailed statement of environmental impacts be prepared for all major federal actions significantly affecting the human environment.
National Oceanic Atmospheric and Administration	Department of Commerce agency focused on the condition of the oceans and atmosphere. NOAA divisions include the National Weather Service, the National Hurricane Center, and the National Marine Fisheries Service.
National Pollutant Discharge Elimination System	Provision of the Clean Water Act that prohibits discharge of pollutants into U.S. waters unless a special permit is issued by EPA, a state, or where delegated, a tribal government on a Native American reservation, abbreviated NPDES.
Peak Particle Velocity	Measure of ground vibration. Peak particle velocity is the maximum velocity caused by a sound wave during a particular event.
Permeability	Rate at which fluids flow through the subsurface and reflects the degree to which pore space is connected.
pH	A measure of the acidity or alkalinity of a solution.
Plume Radius	Radius within which 95 percent of the sequestered gas-phase CO ₂ mass occurs.
Potable Water	<i>Water that is safe and satisfactory for drinking and cooking.</i>
Resultant Noise Level	A-weighted sound measured in dBA, also called sound level.
Root-Mean-Square	Statistical measure of the magnitude of a varying quantity. The root-mean-square (RMS or rms) is the square root of the mean of the squares of the values.

Term	Definition
Saline Formation	Porous rock formation that is overlain by one or more impermeable rock formations and thus has the potential to trap injected CO ₂ .
Solubility	Ability or tendency of one substance to dissolve into another at a given temperature and pressure.
Sorbent	Material used to absorb other materials. A surface that takes up or holds a substance, by absorption or adsorption.
Sound Pressure Level	Measure of a sound's strength or intensity, expressed in dB. The sound pressure level generated by a steady source of sound will usually vary with distance and direction from the source.
Special Waste	As regulated by the State of Illinois, special waste includes hazardous waste, potentially infectious medical waste, industrial process waste, and pollution control waste (e.g., baghouse dust, landfill waste, scrubber sludge, and chemical spill cleaning material).
Supercritical CO₂	CO ₂ usually behaves as a gas in air or as a solid in dry ice. If the temperature and pressure are both increased (above its supercritical temperature of 88°F [31.1°C] and 73 Atmosphere [1073 psi]), it can adopt properties midway between a gas and a liquid, such that it expands to fill its container like a gas, but has a density like that of a liquid.
Surface Water	All bodies of water on the surface and open to the atmosphere, such as rivers, lakes, reservoirs, ponds, seas, and estuaries.
Syngas	Gas mixture containing varying amounts of carbon monoxide (CO) and hydrogen (H ₂) generated by the gasification of a carbon-containing fuel.
Terrestrial Sequestration	Process through which CO ₂ from the atmosphere is absorbed by trees, plants, and crops through photosynthesis and stored as carbon compounds in biomass (tree trunks, branches, foliage, and roots) and soils. While terrestrial sequestration may be an attractive and useful sequestration option, the long-term accountability and permanence, and the inability to directly store the CO ₂ captured from a particular power plant make this option unlikely to be implemented in the electrical power industry.
Threatened Species	Plants or animals likely to become endangered species within the foreseeable future. A federal list of threatened species can be found in 50 CFR 17.11 (wildlife), 50 CFR 17.12 (plants), and 50 CFR 227.4 (marine organisms). Illinois maintains its list of threatened species with the Illinois Endangered Species Protection Board and Texas maintains its list with the Texas Parks and Wildlife Department.

Term	Definition
Traditional Cultural Property	District, site, building, structure, or object that is valued by a community for the role it plays in sustaining the community's cultural integrity, abbreviated TCP.
<i>Underground Source of Drinking Water</i>	<i>Any aquifer or part of an aquifer that: supplies any public water system, or contains a sufficient quantity of groundwater to supply a public water system or currently supplies drinking water for human consumption or contains fewer than 10,000 milligrams per liter of total dissolved solids; and is not an exempted aquifer.</i>
Unplanned Restart	A series of events where power plant components are re-activated in a sequence to bring the plant to its fully operating state after an upset condition has been remedied.
Upset	An unplanned start when the entire system is held at no load while an issue with a component is corrected.
Upset Condition	An unpredictable failure of process components or subsystems which leads to an overall malfunction or temporary shutdown of the power plant.
Vadose Zone	Area of soil between the ground surface and the area directly above the groundwater surface (i.e., the water table) of unconfined aquifers.
Vibration	Force that oscillates about a specified reference point. Vibration is commonly expressed in terms of frequency such as cycles per second (cps), Hertz (Hz), cycles per minute (cpm), and strokes per minute (spm).
Viscosity	Measure of a material's resistance to flow.
Wetland	Area 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.
Wind Rose	Circular diagram that illustrates the relative frequency of wind speeds for each compass direction based on a time interval.
Zero Liquid Discharge System	Process separates solids and dissolved constituents from the plant wastewater and allows the treated water to be recycled or reused in the industrial process, resulting in no discharge of wastewater to the environment.