
6. GLOSSARY

Air Pollutant — Any substance in the air which could, if in a high-enough concentration, harm man, animals, vegetation, or material.

Air Quality Control Region — Geographic subdivisions of the United States, designed to deal with pollution on a regional or local level. Some regions span more than one state.

Alluvial Deposits — Deposits of earth, sand, gravel, and other materials carried by moving surface water and deposited at points of weak water flow.

Alpha Particle — A positively charged particle, consisting of two protons and two neutrons, that is emitted during radioactive decay from the nucleus of certain nuclides. It is the least penetrating of the three common types of radiation (alpha, beta, and gamma).

Alpha Wastes — Wastes containing radioactive isotopes that decay by producing alpha particles.

Ambient Air — The surrounding atmosphere as it exists around people, plants, and structures. Air quality standards are used to provide a measure of the health-related and visual characteristics of the air.

Ambient Air Quality Standards — The level of pollutants in the air prescribed by regulations that may not be exceeded during a specified time in a defined area.

Aquatic — Living or growing in, on, or near water.

Aquifer — A saturated geologic unit through which significant quantities of water can migrate under natural hydraulic gradients.

Archaeological Resources — Any location where humans have altered the terrain or discarded artifacts during either prehistoric or historic times.

Artifact — An object produced or shaped by human workmanship of archaeological or historical interest.

As Low as Reasonably Achievable (ALARA) — A concept applied to ensure the quantity of radioactivity released to the environment and the radiation exposure of onsite workers in routine operations, including “anticipated operational occurrences,” is maintained as low as reasonably achievable. It takes into account the state of technology, economics of improvements in relation to benefits to public health and safety, and other societal and economic considerations in relation to the use of nuclear energy in the public interest.

Background Radiation — Ionizing radiation present in the environment from cosmic rays and natural sources in the Earth; background radiation varies considerably with location.

Badged Worker — A worker who has the potential to be exposed to radiation and is equipped with a dosimeter to measure his/her dose.

Barrier — Any material or structure that prevents or substantially delays movement of radionuclides toward the accessible environment.

Baseline — A quantitative expression of conditions, costs, schedule, or technical progress to serve as a base or standard for measurement during the performance of an effort; the established plan against which the status of resources and progress of a project can be measured. For this environmental impact statement, the environmental baseline is the site environmental conditions as they exist or have been estimated to exist in the absence of the proposed action.

BEIR V — Biological Effects of Ionizing Radiation; referring to the fifth in a series of committee reports from the National Research Council.

Beta Particle — A charged particle emitted from the nucleus of an atom during radioactive decay. A negatively charged beta particle is identical to an electron; a positively charged beta particle is called a “positron.”

Biota (biotic) — The plant and animal life of a region (pertaining to biota).

Blanket Fuel — Those fuel tubes or elements composed of depleted or natural enrichment of uranium, placed at the perimeter of the reactor core, and used to breed the fissile material plutonium-239 or used as shielding.

Blending — Selecting spent nuclear fuel assemblies of different characteristics for inclusion in a transportation cask, storage mode, or waste package; also, selecting high-level radioactive waste of different characteristics for inclusion in a transportation cask or waste package to meet design goals.

Borosilicate Waste Glass — Glass typically containing approximately 20 to 40 weight percent waste oxides, 40 to 65 weight percent silica, 5 to 10 weight percent boron oxide, and 10 to 20 weight percent alkali oxides, plus other oxide constituents.

Breeder Reactor — A type of nuclear reactor that creates more fissionable fuel than it uses.

Burnup — A term used to indicate the amount of fuel consumed during the irradiation process. The percentage of heavy metal atoms fissioned or the thermal energy produced per mass of fuel (usually measured in megawatt days per ton (MWd/t)).

Calcine — To heat to a high temperature without fusing in order to decompose or oxidize; the material produced by converting high-level radioactive waste to unconsolidated granules or powder.

Cancer — The name given to a group of diseases characterized by uncontrolled cellular growth with cells having invasive characteristics such that the disease can transfer from one organ to another.

Canister — The structure surrounding the waste form (e.g., high-level radioactive waste immobilized in borosilicate glass) that facilitates handling, storage, transportation, and/or disposal. A canister is a metal receptacle with the following purpose: (1) for solidified high-level radioactive waste, its purpose is a pour mold and (2) for spent nuclear fuel, it may provide structural support for intact spent nuclear fuel, loose rods, nonfuel components, or confinement of radionuclides.

Canning — The process of placing spent nuclear fuel in canisters to retard corrosion, contain radioactive releases, or control geometry.

Capable Fault — A fault that has exhibited one or more of the following characteristics:

- (1) Movement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years.

- (2) Macro-seismicity instrumentally determined with records of sufficient precision to demonstrate a direct relationship with the fault.
- (3) A structural relationship to a capable fault according to characteristics (1) or (2) of this paragraph such that movement on one could be reasonably expected to be accompanied by movement on the other.

Cask — A heavily shielded container that meets U.S. Nuclear Regulatory Commission and U.S. Department of Transportation regulatory requirements and is used to store and/or ship radioactive materials (i.e., spent nuclear fuel or high-level radioactive waste). Lead, depleted uranium, and steel are common materials used in the manufacture of casks.

Characterization — The determination of waste composition and properties, whether by review of process knowledge, nondestructive examination or assay, or sampling and analysis, generally done for the purpose of determining appropriate storage, treatment, handling, transport, and disposal requirements.

Chronic Exposure — Low-level radiation exposure incurred over a long time period due to residual contamination.

Cladding — The outer jacket of fuel elements usually made of aluminum, stainless steel, or zirconium alloy, used to prevent fuel corrosion and retain fission products during reactor operation, or to prevent releases into the environment during storage.

Class I Areas — National parks and wilderness areas designated by the Prevention of Significant Deterioration section of the Clean Air Act amendments. These amendments and the implementing regulations provide special protection to air quality and air quality-related values in such areas. Only very slight deterioration of air quality is allowed in Class I areas.

Class II Areas — Most of the country not designated as Class I is designated as Class II. Class II areas are generally cleaner than air quality standards require and moderate increases in new pollution are allowed after a regulatory-mandated impacts review.

Code of Federal Regulations (CFR) — All Federal regulations in force are published in codified form in the Code of Federal Regulations.

Collective Committed Effective Dose Equivalent — The committed effective dose equivalent of radiation for a population.

Committed Dose Equivalent — The predicted total dose equivalent to a tissue or organ over a 50-year period after an intake of a radionuclide into the body. It does not include external dose contributions. Committed dose equivalent is expressed in units of rem or sievert. The committed effective dose equivalent is the sum of the committed dose equivalents to various tissues of the body, each multiplied by the appropriate weighting factor.

Community (biotic) — All plants and animals occupying a specific area under relatively similar conditions.

Conditioning — Any process which prepares or treats spent nuclear fuel or high-level radioactive waste for storage, transportation, or disposal in accordance with regulatory requirements.

Conformity — Conformity is defined in the Clean Air Act as the action's compliance with an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air

Quality Standards and achieving expeditious attainment of such standards; and that such activities will not: (1) cause or contribute to any new violation of any standard in any area; (2) increase the frequency or severity of any existing violation of any standard in any area; or (3) delay timely attainment of any standard or any required interim emission reduction or other milestones in any area.

Consumptive Water Use — The difference in the volume of water withdrawn from a body of water and the amount released back into the body of water.

Contact-handled Waste — Packaged waste whose external surface dose rates does not exceed 200 millirem per hour.

Container — With regard to radioactive wastes, the metal envelope in the waste package that provides the primary containment function of the waste package and is designed to meet the containment requirements of 10 CFR 60.

Contamination — The deposition of unwanted radioactive material on the surfaces of structures, areas, objects, or personnel.

Coolant — A gas or liquid circulated through a nuclear reactor to remove or transfer heat.

Credible Accident — An accident that has a probability of occurrence greater than or equal to one in a million years.

Criteria Pollutants — The Clean Air Act required the U.S. Environmental Protection Agency to set air quality standards for common and widespread pollutants after preparing “criteria documents” summarizing scientific knowledge on their health effects. Today there are standards in effect for six “criteria pollutants”: sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter less than or equal to 10 microns in diameter (PM₁₀) and less than or equal to 2.5 microns in diameter (PM_{2.5}), nitrogen dioxide (NO₂), ozone (O₃), and lead (Pb).

Critical Habitat — Defined in the *Endangered Species Act* of 1973 as “specific areas within the geographical area occupied by [an endangered or threatened] species, essential to the conservation of the species and which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species that are essential for the conservation of the species.”

Criticality — A self-sustained nuclear chain reaction resulting from fissionable material of sufficient mass in a particular geometry.

Cultural Resources — Archaeological sites, historical sites, architectural features, traditional use areas, and Native American sacred sites.

Cumulative Impacts — In an environmental impact statement, the impact on the environment which 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 nonfederal), private industry, or individual(s) undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Curie (Ci) — A unit of radioactivity equal to 37 billion disintegrations per second; also a quantity of any nuclide or mixture of nuclides having 1 curie radioactivity.

Day-Night Average Sound Level — The 24-hour A-weighted (see decibel, A-weighted) equivalent sound level expressed in decibels, with a 10-decibel penalty added to sound levels between 10:00 p.m. and 7:00 a.m. to account for increased annoyance due to noise during nighttime hours.

Decay Heat (radioactivity) — The heat produced by the decay of certain radionuclides.

Decay (radioactive) — The decrease in the amount of any radioactive material with the passage of time due to the spontaneous transformation of an unstable nuclide into a different nuclide or into a different energy state of the same nuclide; the emission of nuclear radiation (alpha, beta, or gamma radiation) is part of the process.

Decladding — The process of mechanically removing the cladding from the fuel pin in a fuel element.

Decibel (dB) — A logarithmic unit of sound measurement which describes the magnitude of a particular quantity of sound pressure power with respect to a standard reference value. In general, a sound doubles in loudness for every increase of 10 decibels.

Decibel, A-weighted (dBA) — A unit of frequency weighted sound pressure level, measured by the use of a metering characteristic and the “A” weighting specified by the American National Standards Institution ANSI S1.4-1983 (R1594), that accounts for the frequency response of the human ear.

Deciduous — Trees which shed leaves at a certain season.

Decommissioning — The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.

Decontamination — The actions taken to reduce or remove substances that pose a substantial present or potential hazard to human health or the environment, such as radioactive or chemical contamination from facilities, equipment, or soils by washing, heating, chemical or electrochemical action, mechanical cleaning, or other techniques.

Degraded (spent nuclear fuel) — Spent nuclear fuel whose external cladding has cracked, pitted, corroded, or potentially allows the leakage of radioactive materials.

°C (degrees Celcius) — A unit for measuring temperature using the centigrade scale in which the freezing point of water is 0 degrees and the boiling point is 100 degrees.

°F (degrees Farhenheit) — A unit for measuring temperature using the Farhenheit scale in which the freezing point of water is 32 degrees and the boiling point is 212 degrees.

Depleted Uranium — Uranium with a smaller percentage of uranium-235 than the 0.711 weight percent found in natural uranium. It is a byproduct of the uranium enrichment process, during which uranium-235 is collected from one batch of uranium, thereby depleting it, and adding to another batch to increase its concentration of uranium-235.

Dilute — To reduce the concentration of a substance by adding it to another material.

Disposal — The isolation of radioactive wastes from the accessible environment, as defined in 10 CFR 60.2. Disposal means the emplacement in a repository of high-level radioactive waste, spent nuclear fuel, or other highly radioactive material with no foreseeable intent of recovery, whether or not such emplacement permits the recovery of such waste.

Direct Jobs — The number of workers required at a site to implement an alternative.

Disassembly — Removal of the fuel elements from the fuel assembly.

DOE Orders — Requirements internal to the U.S. Department of Energy (DOE) that establish DOE policy and procedures, including those for compliance with applicable laws.

DOE Site Boundary — A geographic boundary within which public access is controlled and activities are governed by the U.S. Department of Energy (DOE) and its contractors, not by local authorities. Based on the definition of exclusion zone, a public road traversing a DOE site is considered to be within the DOE site boundary if DOE or the site contractor has the capability to control the road at any time necessary.

Dose — The energy imparted to matter by ionizing radiation. The unit of absorbed dose is the rad.

Dose Commitment — The dose an organ or tissue would receive during a specified period of time (e.g., 50 to 100 years) as a result of intake (by ingestion or inhalation) of one or more radionuclides from a defined release, frequently over a year's time.

Dose Equivalent — The product of absorbed dose in rad (or Gray) and a quality factor, which quantifies the effect of this type of radiation in tissue. Dose equivalent is expressed in units of rem or Sievert, where 1 rem equals 0.01 Sievert.

Dosimeter — A small device (instrument) carried by a radiation worker that measures cumulative radiation dose (e.g., film badge or ionization chamber).

Drinking Water Standards — The level of constituents or characteristics in a drinking water supply specified in regulations under the Safe Drinking Water Act as the maximum permissible.

Driver Fuel — These fuel tubes or assemblies usually contain enriched uranium, plutonium, or thorium materials, which can be fissioned (or split) by neutrons. Because this fuel drives neutron bombardment of targets or blanket in a production, breeder, or research reactor, these fuels are called drivers.

Dry Storage — Storage of spent nuclear fuel in environments where the fuel is not immersed in liquid for purposes of cooling and/or shielding.

Effective Dose Equivalent — The sum of the products of the dose equivalent received by specified tissues of the body and a tissue-specific weighting factor. This sum is a risk-equivalent value and can be used to estimate the health effects risk to the exposed individual. The tissue-specific weighting factor represents the fraction of the total health risk resulting from uniform whole-body irradiation that would be contributed by that particular tissue. The effective dose equivalent includes the committed effective dose equivalent from internal deposition of radionuclides, and the effective dose equivalent due to penetrating radiation from sources external to the body. Effective dose equivalent is expressed in units of rem or Sievert.

Effluent — A gas or fluid discharged into the environment.

Effluent (liquid) — Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall; generally refers to wastes discharged into surface waters.

Electrometallurgical Treatment — A technique to collect, concentrate, and immobilize fission products and transuranic elements from metallic spent nuclear fuel by removing the uranium in the spent fuel with an electrochemical cell. The treatment alters the chemical and physical nature of spent nuclear fuel to reduce its toxicity, volume, and mobility to render it amendable to transport, storage, or disposal.

Emergency Condition — For a nuclear facility, occurrences or accidents that might occur infrequently during startup testing or operation of the facility. Equipment, components, and structures might be deformed by these conditions to the extent that repair is required prior to reuse.

Emission — A material discharged into the atmosphere from a source operation or activity.

Emission Standards — Legally enforceable limits on the quantities and/or kinds of air contaminants that may be emitted into the atmosphere.

Empirical — Something that is based on actual measurement, observation, or experience rather than on theory.

Endangered Species — Any species which is in danger of extinction throughout all or significant portions of its range. The Endangered Species Act of 1973, as amended, establishes procedures for placing species on the Federal lists of endangered or threatened species.

Enriched Uranium — Uranium in which the abundance of the isotope uranium-235 is increased above the normal (naturally occurring) level of 0.711 weight percent.

Entrainment — The involuntary capture and inclusion of organisms in streams of flowing water; a term often applied to the cooling water systems of power plants/reactors. The organisms involved may include phyto- and zooplankton, fish eggs and larvae (ichthyoplankton), shellfish larvae, and other forms of aquatic life.

Environment, Safety, and Health Program — In the context of the U.S. Department of Energy (DOE), encompasses those DOE requirements, activities, and functions in the conduct of all DOE and DOE-controlled operations that are concerned with: impacts to the biosphere; compliance with environmental laws, regulations, and standards controlling air, water, and soil pollution; limiting the risks to the well-being of both the operating personnel and the general public; and protecting property against accidental loss or damage. Typical activities and functions related to this program include, but are not limited to, environmental protection, occupational safety, fire protection, industrial hygiene, health physics, occupational medicine, process and facilities safety, nuclear safety, emergency preparedness, quality assurance, and radioactive and hazardous waste management.

Environmental Assessment — A written environmental analysis prepared pursuant to the National Environmental Policy Act. This assessment is performed to determine whether a Federal action could significantly affect the environment and thus require preparation of a more detailed environmental impact statement. If the action will not significantly affect the environment, then a Finding of No Significant Impact is prepared.

Environmental Impact Statement (EIS) — A document required of Federal agencies by the National Environmental Policy Act for major proposals or legislation significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and alternative actions.

Environmental Justice — The fair treatment of people of all races, cultures, incomes, and educational levels with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no population of people should be forced to shoulder a disproportionate share of the negative environmental impacts of pollution or environmental hazards due to a lack of political or economic influence.

Environmental Survey — A documented, multi-disciplined assessment (with sampling and analysis) of a facility to determine environmental conditions and to identify environmental problems requiring corrective action.

Epidemiology — The science concerned with the study of events that determine and influence the frequency and distribution of disease, injury, and other health-related events and their causes in a defined human population.

Equivalent Sound (Pressure) Level — The equivalent steady sound level that, if continuous during a specified time period, would contain the same total energy as the actual time varying sound. For example, L_{eq} (1-h) and L_{eq} (24-h) are the 1-hour and 24-hour equivalent sound levels, respectively.

Existing Facilities — Facilities that are projected to exist as of the Record of Decision for this EIS, scheduled for January 2000.

Exposure Limit — The level of exposure to a hazardous chemical (set by law or a standard) at which or below which adverse human health effects are not expected to occur:

- (1) Reference dose is the chronic exposure dose (milligrams or kilograms per day) for a given hazardous chemical at which or below which adverse human noncancer health effects are not expected to occur.
- (2) Reference concentration is the chronic exposure concentration (milligrams per cubic meter) for a given hazardous chemical at which or below which adverse human noncancer health effects are not expected to occur.

External Accident — Accidents initiated by manmade energy sources not associated with operation of a given facility. Examples include airplane crashes, induced fires, and transportation accidents adjacent to a facility.

Fault — A fracture or a zone of fractures within a rock formation along which vertical, horizontal, or transverse slippage has occurred. A normal fault occurs when the hanging wall has been depressed in relation to the footwall. A reverse fault occurs when the hanging wall has been raised in relation to the footwall.

Finding of No Significant Impact — A document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded, will not have a significant effect on the human environment and will not require an environmental impact statement under the National Environmental Policy Act.

Fissile Materials — Although sometimes used as a synonym for fissionable material, this term has acquired a more restricted meaning, namely, any material fissionable by thermal (slow) neutrons. The three primary fissile materials are uranium-233, uranium-235, and plutonium-239.

Fission (Fissioning) — The splitting of a nucleus into at least two other nuclei and the release of a relatively large amount of energy. Two or three neutrons are usually released during this type of transformation.

Fission Products — Nuclei formed by the fission of heavy elements (primary fission products); also, the nuclei formed by the decay of the primary fission products, many of which are radioactive.

Fissionable Material — Material that could undergo fission by the absorption of fast neutrons.

Floodplain — The lowlands adjoining inland and coastal waters and relatively flat areas.

Formation — In geology, the primary unit of formal stratigraphic mapping or description. Most formations possess certain distinctive features.

Fossil — Impression of trace of an animal or plant of past geological ages that has been preserved in the earth's crust.

Fuel Assembly — A cluster of fuel elements (or rods).

Fuel Element — Nuclear reactor component that includes the fissile material (fuel pin) sealed in cladding.

Fuel Pin — The uranium metal or alloy that undergoes fission in a nuclear reactor.

Fugitive Emissions — Emissions to the atmosphere from pumps, valves, flanges, seals, and other process points not vented through a stack. Also includes emissions from area sources such as ponds, lagoons, landfills, piles of stored material, and exposed soil.

g — A designator for ground motion acceleration, the rate of displacement of the ground due to the passage of elastic waves arising from earthquakes, explosions, seismic shots, machinery, wind, traffic, and other causes. The unit of acceleration is equal to about 9.8 meters per second² (32.2 feet per second²).

Gamma-emitter — A radioactive substance that decays by releasing gamma radiation.

Gamma Rays — High-energy, short-wavelength, electromagnetic radiation accompanying fission and either emitted from the nucleus of an atom or emitted by some radionuclide or fission product. Gamma rays are very penetrating and can be stopped only by dense materials (such as lead) or a thick layer of shielding materials.

Gaussian Plume — The distribution of material (a plume) in the atmosphere resulting from the release of pollutants from a stack or other source. The distribution of concentrations about the centerline of the plume, which is assumed to decrease as a function of its distance from the source and centerline (Gaussian distribution), depends on the mean wind speed and atmospheric stability.

Genetic Effects — The outcome resulting from exposure to mutagenic chemicals or radiation which results in genetic changes in germ line or somatic cells.

- (1) Effects on genetic material in reproductive cells cause trait modifications that can be passed from parents to offspring.
- (2) Effects on genetic material in nonreproductive cells result in tissue or organ modifications (e.g., liver tumors) that do not pass from parents to offspring.

Geologic Repository — A system that is intended to be used for, or may be used for, the disposal of radioactive waste or spent nuclear fuel in excavated geologic media. A geologic repository includes (a) the geologic repository operations area, and (b) the portion of the geologic setting that provides isolation. A near-surface disposal area is not a geologic repository.

Geology — The science that deals with the Earth: the materials, processes, environments, and history of the planet, including the rocks and their formation and structure.

Groundwater — The supply of water found beneath the Earth's surface, usually in aquifers, which may supply wells and springs.

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

Half-Life — The time in which half the atoms of a radioactive isotope decay to another nuclear form. Half-lives vary from millionths of a second to billions of years.

Hazardous Chemical — Under 29 CFR 1910, Subpart Z, “hazardous chemicals” are defined as “any chemical which is a physical hazard or a health hazard.” Physical hazards include combustible liquids, compressed gases, explosives, flammables, organic peroxides, oxidizers, pyrophorics, and reactives. A health hazard is any chemical for which there is good evidence that acute or chronic health effects occur in exposed employees. Hazardous chemicals include carcinogens, toxic or highly toxic agents, reproductive toxins, irritants,

corrosives, sensitizers, hepatotoxins, nephrotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes, or mucous membranes.

Hazardous Material — A material, including a hazardous substance, as defined by 49 CFR 171.8, which poses a risk to health, safety, and property when transported or handled.

Hazardous Substance — Any substance that when released to the environment in an uncontrolled or unpermitted fashion becomes subject to the reporting and possible response provisions of the Clean Water Act and the Comprehensive Environmental Response, Compensation, and Liability Act.

Hazardous/Toxic Air Pollutants — Air pollutants known or suspected to cause serious health problems such as cancer, poisoning, or sickness, and may have immunological, neurological, reproductive, developmental, or respiratory effects.

Hazardous Waste — Any solid waste (can also be semisolid or liquid, or contain gaseous material) having the characteristics of ignitability, corrosivity, toxicity, or reactivity, defined by the Resource Conservation and Recovery Act and identified or listed in 40 CFR 261 or by the Toxic Substances Control Act.

Heavy Metals — Metallic or semimetallic elements of high molecular weight, such as mercury, chromium, cadmium, lead, and arsenic, that are toxic to plants and animals at known concentrations.

High Efficiency Particulate Air Filter (HEPA) — A filter used to remove very small particulates from dry gaseous effluent streams.

High-Level Radioactive Waste — The highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation.

Historic Resources — Archaeological sites, architectural structures, and objects produced after the advent of written history dating to the time of the first Euro-American contact in an area.

Hot Cell/Hot Cell Facility — A heavily shielded enclosure for handling and processing (by remote means or automatically), or storing highly radioactive materials.

Impingement — The process by which aquatic organisms too large to pass through the screens of a water intake structure become caught on the screens and are unable to escape.

Inert cell — An enclosure where operations that require very low oxygen levels are performed.

Ingot — A mass of metal cast in a standard shape for convenient storage or shipment.

Involved Worker — Workers that would be involved in a proposed action as opposed to workers that would be on the site of a proposed action but not involved in the action.

Ionizing Radiation — Alpha particles, beta particles, gamma rays, neutrons, high-speed electrons, high-speed protons, and other particles or electromagnetic radiation that can displace electrons from atoms or molecules, thereby producing ions.

Isotope — An atom of a chemical element with a specific atomic number and atomic mass. Isotopes of the same element have the same number of protons, but different numbers of neutrons and different atomic masses.

Joule — A metric unit of energy, work, or heat, equivalent to 1 watt-second, 0.737 foot-pound, or 0.239 calories.

Karst Terrain — A type of land surface that is found in regions underlain by soluble rocks, such as limestone and dolomite, which is peculiar to dependent upon underground solution of the bedrock and the diversion of the surface waters to underground waters (that is, stream that disappear underground). Karst terrain is characterized by sinkholes, underground streams, and caves.

Landscape Character — The arrangement of a particular landscape as formed by the variety and intensity of the landscape features (land, water, vegetation, and structures) and the four basic elements (form, line, color, and texture). These factors give an area a distinctive quality that distinguishes it from its immediate surroundings.

Latent Fatalities — Fatalities associated with acute and chronic environmental exposures to chemical or radiation that occur within 30 years of exposure.

Liquid Metal Cooled Breeder Reactor — A reactor that creates more fissionable material than it consumes and uses liquid metal as a coolant. Liquid sodium is a common metal used to cool this type of reactor.

Long-Lived Isotopes — Radionuclides with half-lives greater than about 30 years.

Long-term Storage — The storage of hazardous waste (a) onsite (a generator site) for a period of 90-days or greater, other than in a satellite accumulation area, or (b) offsite in a properly managed treatment, storage, or disposal facility for any period of time.

Low-Level Radioactive Waste — Waste that contains radioactivity, but is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or by-product material as defined by Section 11e (2) of the Atomic Energy Act of 1954, as amended.

Management — As used in this EIS, the stabilization and interim storage of sodium-bonded spent nuclear fuel pending final disposition.

Maximum Contaminant Level — The maximum permissible level of a contaminant in water delivered to any user of a public drinking water system. Maximum contaminant levels are enforceable standards under the Safe Drinking Water Act.

Maximally Exposed Individual (MEI) — A hypothetical individual defined to allow dose or dosage comparison with numerical criteria for the public. This individual is located at the point on the DOE site boundary nearest to the facility in question. A hypothetical person who could potentially receive the maximum dose of radiation or hazardous chemicals.

Megajoule — A unit of heat, work, or energy equal to 1 million joules. See “Joule.”

Meteorology — The science dealing with the atmosphere and its phenomena, especially as relating to weather.

Metric Tons of Heavy Metal (MTHM) — Quantities of unirradiated and spent nuclear fuel are traditionally expressed in terms of metric tons of heavy metal (typically uranium), without the inclusion of other materials, such as cladding, alloy materials, and structural materials. A metric ton is 1,000 kilograms, which is equal to about 2,200 pounds.

Migration — The natural movement of a material through the air, soil, or groundwater; also, seasonal movement of animals from one area to another.

Millirem — One thousandth of a rem.

Mixed Waste — Waste that contains both a hazardous waste subject to RCRA, and source, special nuclear or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.*).

Mollusks — Unsegmented, invertebrate animals including gastropods, pelecypods, and cephalopods.

National Ambient Air Quality Standards (NAAQS) — Uniform, national air quality standards established by the Environmental Protection Agency under the authority of the Clean Air Act that restrict ambient levels of criteria pollutants to protect public health (primary standards) or public welfare (secondary standards), including plant and animal life, visibility, and materials. Standards have been set for ozone, carbon monoxide, particulates, sulfur dioxide, nitrogen, nitrogen dioxide, and lead.

National Emission Standards for Hazardous Air Pollutants — A set of national emission standards for listed hazardous pollutants emitted from specific classes or categories of new and existing sources.

National Pollutant Discharge Elimination System (NPDES) — Federal permitting system required for water pollution effluents under the Clean Water Act, as amended.

National Register of Historic Places — A list maintained by the Secretary of the Interior of districts, sites, buildings, structures, and objects of prehistoric or historic local, state, or national significance under Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 462) and Section 101(a) (1) (A) of the National Historic Preservation Act of 1966, as amended.

Neutron — An uncharged elementary particle with a mass slightly greater than that of the proton, found in the nucleus of every atom heavier than hydrogen-1. A free neutron is unstable and decays with a half-life of about 13 minutes into an electron and a proton; used in the fission process.

Neutron Flux — The product of neutron number density and velocity (energy), giving an apparent number of neutrons flowing through a unit area per unit time.

Neutron Poison — A chemical solution (e.g., a boron or component sheet or a burnable absorber rod) inserted into a nuclear reactor or spent fuel pool to absorb neutrons and end criticality. Any material with a strong affinity for absorbing neutrons without generating new neutrons that can be used to control the nuclear chain reaction.

Nitrogen Oxides — Refers to the oxides of nitrogen, primarily NO (nitrogen oxide) and NO₂ (nitrogen dioxide). These are produced in the combustion of fossil fuels and can constitute an air pollution problem. Nitrogen dioxide emissions contribute to acid deposition and formation of atmospheric ozone.

Noble metals — A group of metals that are highly resistant to oxidation and corrosion, such as zirconium, niobium, and gold.

Noise — Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying (unwanted sound).

Nonattainment Area — An air quality control region (or portion thereof) in which the Environmental Protection Agency has determined that ambient air concentrations exceed national ambient air quality standards for one or more criteria pollutants.

Normal Conditions — All activities associated with a facility mission, whether operation, maintenance, storage, and so, forth, which are carried out within a defined envelope. This envelope can be design process conditions, performance in accordance with procedures, and so forth.

Notice of Intent — Announces the scoping process. The Notice of Intent is usually published in the Federal Register and a local newspaper. The scoping process includes holding at least one public meeting and requesting written comments on what issues and environmental concerns an environmental impact statement should address.

Nuclear Power Plant — A facility that converts nuclear energy into electrical power.

Nuclear Radiation — Particles (alpha, beta, neutrons) or photons (gamma) emitted from the nucleus of unstable radioactive atoms as a result of radioactive decay.

Nuclear Reaction — A reaction in which an atomic nucleus is transformed into another isotope of that respective nuclide, or into another element altogether; it is always accompanied by the liberation of either particles or energy.

Nuclear Reactor — A device that sustains a controlled nuclear fission chain reaction that releases energy in the form of heat.

Nuclear Regulatory Commission (NRC) — The Federal agency that regulates the civilian nuclear power industry in the United States.

Nuclide — A species of atom characterized by the constitution of its nucleus and, hence, by the number of protons, the number of neutrons, and the energy content.

Occupational Safety and Health Administration — Oversees and regulates workplace health and safety, created by the Occupational Safety and Health Act of 1970.

Off-gas — Volatile and semi-volatile gaseous products that are released during a process.

Off Site — As used in the environmental impact statement, the term denotes a location, facility, or activity occurring outside of the boundary of the facility of interest.

Ozone — The triatomic form of oxygen; in the stratosphere, ozone protects the Earth from the sun's ultraviolet rays, but in lower levels of the atmosphere, ozone is considered an air pollutant.

Packaging — With regard to hazardous or radionuclide materials, the assembly of components necessary to ensure compliance with Federal regulations for transportation. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle tie-down system and auxiliary equipment may be designated as part of the packaging.

Particulate Matter — Air pollutants including dust, dirt, soot, smoke, or liquid droplets emitted into the air. "Total suspended particulate" was first used as the indicator for particulate concentrations. Current standards use the indicators "PM₁₀" and "PM_{2.5}," which include only those particles with an aerodynamic diameter smaller than or equal to 10 micrometers and 2.5 micrometers, respectively. The smaller particles are more responsible for adverse health effects because they reach further into the respiratory tract.

Permutation — Changing the order of elements arranged in a particular order.

Person-Rem — The unit of collective radiation dose to a given population; the sum of the individual doses received by a population segment.

Playa — A dry lake bed in a desert basin or a closed depression that contains water on a seasonal basis.

Plume — A flowing, often somewhat conical, trail of emissions from a continuous point source.

Plume Immersion — With regard to radiation, the situation in which an individual is enveloped by a cloud of radiation gaseous effluent and receives an external radiation dose.

Plutonium — A heavy, radioactive, metallic element with the atomic number 94. It is produced artificially in a reactor by bombardment of uranium with neutrons and is used in the production of nuclear weapons.

Poison — See “neutron poison.”

Pounds per Square Inch — A measure of pressure; atmospheric pressure is about 14.7 pounds per square inch.

Prevention of Significant Deterioration — An Environmental Protection Agency program, mandated by the Clean Air Act, in which state or Federal permits are required that are intended to limit increases in air pollutant concentrations by restricting emissions for new or modified sources in places where air quality is already better than required to meet primary and secondary ambient air quality standards.

Prime Farmland — Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oil-seed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor without intolerable soil erosion, as determined by the Secretary of Agriculture (Farmland Protection Act of 1981, 7 CFR 7, paragraph 658).

Probabilistic Risk Assessment — A comprehensive, logical, and structured methodology to identify and quantitatively evaluate significant accident sequences and their consequences.

Probable Maximum Flood — Flood levels predicted for a scenario having hydrological conditions that maximize the flow of surface waters.

Programmatic Environmental Impact Statement — A legal document prepared in accordance with the requirements of 102(2)(C) of the National Environmental Policy Act which evaluates the environmental impacts of proposed Federal actions that involve multiple decisions potentially affecting the environment at one or more sites.

Proliferation (Nuclear) — The spread of nuclear weapons and the materials and technologies used to produce them.

PUREX (Plutonium Uranium Extraction) — A chemical separation process that has been used for recovering uranium and plutonium from irradiated fuel in a form usable as reactor fuel or for weapons. The process uses aqueous solvent extraction to perform the separation. This technology can also be used to treat spent nuclear fuel for disposal.

Pyrophoric — Being highly susceptible to spontaneous ignition and continuous combustion.

Qualitative Environmental Impacts — 10 CFR 51, Appendix B defines the qualitative terms “small,” “moderate,” and “large” as follows:

Small	Environmental effects are not detectable or are so minor that they would neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the U.S. Nuclear Regulatory Commission (NRC) has concluded that those impacts that do not exceed permissible levels in the NRC's regulations are considered small.
Moderate	Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
Large	Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

Quality Factor — The principal modifying factor that is employed to derive dose equivalent from absorbed dose.

Rad — See “radiation absorbed dose.”

Radiation — The emitted particles or photons from the nuclei of radioactive atoms. Some elements are naturally radioactive; others are induced to become radioactive by bombardment in a reactor. Naturally occurring radiation is indistinguishable from induced radiation.

Radiation Absorbed Dose (rad) — The basic unit of absorbed dose equal to the absorption of 0.01 Joule per kilogram of absorbing material.

Radioactive Mixed Waste — Waste containing both radioactive and hazardous components regulated by the Atomic Energy Act and the Resource Conservation and Recovery Act, respectively. The term “radioactive component: refers only to the actual radionuclides dispersed or suspended in the waste substance.

Radioactive Waste — Materials from nuclear operations that are radioactive or are contaminated with radioactive materials, and for which use, reuse, or recovery are impractical.

Radioactivity — The spontaneous decay or disintegration of unstable atomic nuclei, accompanied by the emission of radiation.

Radioisotopes — Radioactive nuclides of the same element (same number of protons in their nuclei) that differ in the number of neutrons.

Radionuclide — A radioactive element characterized according to its atomic mass and atomic number which can be man-made or naturally occurring.

Radon — Gaseous, radioactive element with the atomic number 86 resulting from the radioactive decay of radium. Radon occurs naturally in the environment, and can collect in unventilated enclosed areas, such as basements. Large concentrations of radon can cause lung cancer in humans.

RADTRAN — A computer code that combines user-determined meteorological, demographic, transportation, packaging, and material factors with health physics data to calculate the expected radiological consequences and accident risk of transporting radioactive material.

Reactive — Having low chemical stability and subject to high chemical reaction rates.

Record of Decision — A document prepared in accordance with the requirements of the Council on Environmental Quality and National Environmental Policy Act regulations 40 CFR 1505.2, that provides a concise public record of the decision on a proposed Federal action for which an environmental impact statement was prepared. A Record of Decision identifies the alternatives considered in reaching the decision, the environmentally preferable alternative(s), factors balanced in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not.

Regional Economic Area — A geographic area consisting of an economic node and the surrounding counties that are economically related and include the places of work and residences of the labor force. Each regional economic area is defined by the U.S. Bureau of Economic Analysis.

Region of Influence — A site-specific geographic area that includes the counties where approximately 90 percent of the current U.S. Department of Energy and/or contractor employees reside.

Rem — See “roentgen equivalent man.”

Remediation — The process, or a phase in the process, of rendering radioactive, hazardous, or mixed waste environmentally safe, whether through processing, entombment, or other methods.

Reprocessing (of spent nuclear fuel) — Processing of reactor-irradiated nuclear material (primarily spent nuclear fuel) to recover fissile and fertile material, in order to recycle such materials primarily for defense programs. Historically, reprocessing has involved aqueous chemical separations of elements (typically uranium or plutonium) from undesired elements in the fuel.

Riparian — Of, on, or relating to the banks of a natural course of water.

Risk — A quantitative or qualitative expression of possible loss that considers both the probability that a hazard will cause harm and the consequences of that event.

Risk Assessment (chemical or radiological) — The qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific chemical or radiological materials.

Roentgen — A unit of exposure to ionizing X or gamma radiation equal to or producing 1 electrostatic unit of charge per cubic centimeter of air. It is approximately equal to 1 rad.

Roentgen Equivalent Man (rem) — A measure of radiation dose (i.e., the average background radiation dose is 0.3 rem per year). The unit of biological dose equal to the product of the absorbed dose in rads; a quality factor, which accounts for the variation in biological effectiveness of different types of radiation; and other modifying factors.

Runoff — The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and eventually enters streams.

Safety Analysis Report — A safety document that provides a complete description and safety analysis of a facility design, normal and emergency operations, hypothetical accidents and their predicted consequences, and the means proposed to prevent such accidents or mitigate their consequences.

Safety Evaluation Report — A document prepared by the U.S. Nuclear Regulatory Commission that evaluates documentation (i.e., technical specifications, safety analysis reports, and special safety reviews and studies) submitted by a licensee for its approval. This ensures that all of the safety aspects of part or all of the activities conducted at the facility are formally and thoroughly analyzed, evaluated, and recorded.

Sanitary waste — Wastes generated by normal housekeeping activities, liquid or solid (including sludge), which are not hazardous or radioactive.

Scope — In a document prepared pursuant to the National Environmental Policy Act of 1969, the range of actions, alternatives, and impacts to be considered.

Scoping — The solicitation of comments from interested persons, groups, and agencies at public meetings, public workshops, in writing, electronically, or via fax to assist in defining the proposed action, identifying alternatives, and developing preliminary issues to be addressed in an environmental impact statement.

Seismic — Pertaining to any Earth vibration, especially an earthquake.

Seismic Zone — An area defined by the Uniform Building Code (1991), designating the amount of damage to be expected as the result of earthquakes. The United States is divided into six zones: (1) Zone 0: no damage; (2) Zone 1: minor damage, corresponds to intensities V and VI of the modified Mercalli intensity scale; (3) Zone 2A: moderate damage, corresponds to intensity VII of the modified Mercalli intensity scale (eastern U.S.); (4) Zone 2B: slightly more damage than 2A (western U.S.); (5) Zone 3: major damage, corresponds to intensity VII and higher of the modified Mercalli intensity scale; (6) Zone 4: areas within Zone 3 determined by proximity to certain major fault systems.

Severe Accident — An accident with a frequency rate of less than 10^{-6} per year that would have more severe consequences than a design-basis accident, in terms of damage to the facility, offsite consequences, or both.

Sewage — The total of organic waste and wastewater generated by an industrial establishment or a community.

Shielding — With regard to radiation, any material of obstruction (bulkheads, walls, or other construction) that absorbs radiation in order to protect personnel or equipment.

Short-Lived Nuclides — Radioactive isotopes with half-lives no greater than about 30 years (e.g., cesium-137 and strontium-90).

Shutdown — For a U.S. Department of Energy (DOE) reactor, that condition in which the reactor has ceased operation and DOE has declared officially that it does not intend to operate it further (see DOE Order 5480.6, *Safety of Department of Energy-Owned Nuclear Reactors*).

Silt — A sedimentary material consisting of fine mineral particles intermediate in size between sand and clay.

Sinkhole — A depression in the earth's surface formed by the collapse of a cavern roof. Typically associated with Karst terrain.

Sodium-bonded — Physically in contact with and attached to the element sodium.

Source Term — The estimated quantities of radionuclides or chemical pollutants available for release to the environment.

Species of Special Concern — Native species which are either low in numbers, limited in distribution, or have suffered significant habitat losses.

Spent Nuclear Fuel — Fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated for reprocessing.

Standardized Canister — As used in this EIS, this refers to a standardized DOE canister which is a stainless steel, right circular cylinder with a nominal outside diameter of 45.7 centimeters (18 inches), a nominal thickness of .59 centimeters (.375 inches) and a maximum overall length of 3 meters (118.11 inches) with a usable length of 2.55 meters (100.28 inches). The standard canister is used for storing spent nuclear fuel assemblies, high-integrity cans, and any other waste packages.

Surface Water — Water on the Earth's surface, as distinguished from water in the ground (groundwater).

Threatened Species — Any species designated under the Endangered Species Act as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Threshold Limit Values — The recommended highest concentrations of contaminants to which workers may be exposed according to the American Conference of Governmental Industrial Hygienists.

Transuranic Waste — Waste contaminated with alpha-emitting radionuclides with half-lives greater than 20 years and concentrations greater than 100 nanocuries/gram at time of assay. It is not a mixed waste. (A nanocurie is 10^{-9} curies.)

Treatment — In this EIS, a process to remove and/or stabilize metallic sodium.

Unusual Occurrence — Any unusual or unplanned event that adversely affects or potentially affects the performance, reliability, or safety of a facility.

Uranium — A heavy, silvery-white metallic element (atomic number 92) with several radioactive isotopes that is used as fuel in nuclear reactors or as radiation shielding.

Viewshed — The extent of an area that may be viewed from a particular location. Viewsheds are generally bounded by topographic features such as hills or mountains.

Visual Resource Management Class — A class defines the different degrees of modification allowed to the basic elements of landscape. They are: Class 1 - applied to wilderness areas, wild and scenic rivers, and other similar situations; Class 2 - contrasts are seen, but do not attract attention; Class 3 - contrasts caused by a cultural activity are evident, but remain subordinate to the existing landscape; Class 4 - contrasts that attract attention and are dominant features of the landscape in terms of scale, but repeat the contrast of the characteristic landscape; Class 5 - applied to areas where unacceptable cultural modification has lowered scenic quality (where the natural character of the landscape has been disturbed to a point where rehabilitation is needed to bring it up to one of the four other classifications).

Vitreous — Resembling or having the nature of glass.

Vitrification — The process of immobilizing waste material that results in glass-like solid.

Volatile Organic Compounds — A broad range of organic compounds, often halogenated, that vaporize at ambient or relatively low temperatures, such as benzene, chloroform, and methyl alcohol. With regard to air pollution, any organic compound that participates in atmospheric photochemical reaction, except for those designated by the Environmental Protection Agency administrator as having negligible photochemical reactivity.

Waste Minimization and Pollution Prevention — An action that economically avoids or reduces the generation of waste and pollution by source reduction, reducing the toxicity of hazardous waste and pollution, improving energy use, or recycling. These actions will be consistent with the general goal of minimizing present and future threats to human health, safety, and the environment.

Weighting Factor — With regard to radiation, the fraction of the total health risk resulting from uniform whole-body irradiation that could be contributed to that particular tissue.

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. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole-Body Dose — With regard to radiation, the dose resulting from the uniform exposure of all organs and tissues in a human body. (Also see “effective dose equivalent.”)

Wind Rose — A depiction of wind speed and direction frequency for a given period of time.

X/Q (Chi/Q) — The relative calculated air concentration due to a specific air release and atmospheric dispersion; units are (seconds per cubic meter). For example (curies per cubic meter)/(curies per second) = (seconds per cubic meter) or (grams per cubic meter)/(grams per second) = (seconds per cubic meter).

Zeolite — Any group of approximately 30 hydrous (water containing) aluminum silicate minerals or their corresponding synthetic compounds, used chiefly as molecular filters and ion-exchange agents such as is used in a water softener. It is used in electrometallurgical treatment to collect and contain fission products from process salt.