GLOSSARY

°C

Degree Celsius. A temperature scale commonly used in scientific work based on the freezing point of water at 0°C and the boiling point at 100°C under normal atmospheric pressure. $°C = \frac{5}{9} \times (°F - 32)$.

°F

Degree Fahrenheit. A temperature scale based on the freezing point of water at 32°F and the boiling point at 212°F under normal atmospheric pressure. $°F = (°C \times \frac{9}{5}) + 32$.

absorbed dose

The energy deposited per unit mass by ionizing radiation. The unit of absorbed dose is the rad.

accident

One or more unplanned events involving materials that have the potential to endanger the health and safety of workers and the public. An accident can involve a combined release of energy and hazardous materials (radiological or chemical) that might cause prompt or latent adverse health effects.

actinide

Any of a series of chemically similar, mostly synthetic, radioactive elements with atomic numbers ranging from actinium at 89 through lawrencium at 103.

air quality standards

The prescribed level of constituents in the outside air (ambient air) that legally should not be exceeded during a specified unit of time in a specified area.

alpha (α) particle

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

aqueous

Relating to or made with water.

aquifer

A geologic formation that contains enough saturated porous material to permit groundwater to move through it and to yield worthwhile quantities of groundwater to wells and springs.

As Low As Reasonably Achievable (ALARA)

An approach to radiation protection that controls or manages exposures (both individual and collective to workers and general public) as low as social, technical, economic, practical and public policy considerations permit. ALARA is not a dose limit, but a process which has the objective of dose levels as far below applicable limits of 10 CFR 835 as is reasonably achievable. Particular attention is to be paid to this definition in design of facilities.

atomic weight
: The relative weight of an atom of a chemical element based on the weight of the most abundant isotope of carbon, which is taken to be 12.

AXAIRQ
: A computer model that analyzes doses from airborne radionuclide releases.

background exposure
: See exposure to radiation.

background radiation
: Normal radiation present in the lower atmosphere from cosmic rays and earth sources. Background radiation varies with location, depending on altitude and natural radioactivity present in the surrounding geology.

Best Management Practices (BMP)
: A practice or combination of practices that is determined by a state (or other planning agency) to be the most effective, practicable means of preventing pollution generated by nonpoint sources or of reducing it to a level compatible with air or water quality goals.

beta (β) particle
: An elementary particle emitted from a nucleus during radioactive decay. It is negatively charged, identical to an electron, and easily stopped by a thin sheet of metal.

biota
: Living organisms.

blackwater
: Water in Coastal Plain creeks, swamps, and rivers that has a dark or black coloration due to dissolution of naturally-occurring organic matter from soils and decaying vegetation.

bounding accident
: An accident whose calculated consequences encompass all other possible accident consequences for that facility. For example, a bounding accident for the release of hazardous material from a storage tank would postulate the release of the entire tank contents. The consequences from this accident would be greater than the consequences of all other tank release accidents.

brownfield
: An area that has been previously disturbed by industrial activities.

burn
: Irradiation of fuel in a nuclear reactor with the resultant production of energy, neutrons, and fission products.

burnup
: The total energy released through fission by a given amount of nuclear fuel; generally measured in megawatt-days.

cancer
: A malignant tumor of potentially unlimited growth, capable of invading surrounding tissue or spreading to other parts of the body by metastasis.

canister
: A stainless-steel container in which nuclear material is sealed.

canyon
: A heavily shielded building where radioactive materials are chemically processed to recover special isotopes for national defense or other programmatic purposes. In the canyon, operation and maintenance are remotely-controlled.

capable (geology)
: Describes a geological fault that has moved at or near the ground surface within the past 35,000 years.

carcinogen
: An agent capable of inducing cancer.

carcinogenic
: Capable of inducing cancer.

case
: The application of a given technology to a single fuel group.

cask
: A massive, heavily-shielded container for holding nuclear materials during shipment.

cesium
: Naturally occurring element with 55 protons in its nucleus. Some manmade isotopes of cesium are radioactive (e.g., cesium-134, cesium-137).

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

co-disposal
: A disposal approach for spent nuclear fuel in a geologic repository. Five canisters of high-level waste would fit in a repository waste package, with room for one 17-inch (43-centimeter) diameter canister of spent nuclear fuel.

collective dose
: The sum of the individual doses to all members of a specific population.

committed dose equivalent
: The calculated dose equivalent received by a tissue or an organ during the 50-year period after a radionuclide is introduced into the body.

committed effective dose equivalent
: The sum of the committed dose equivalents to various tissues/organs in the body multiplied by their appropriate tissue weighting factor. Equivalent in effect to a uniform external dose of the same value.

community (environmental justice)
: A group of people or a specific location exposed to risks that potentially threaten health, ecology, or land values, or exposed to industry that stimulates unwanted noise, smell, industrial traffic, particulate matter, or other nonaesthetic impacts.

concentration
: The amount of a substance contained in a unit quantity of material.

confining unit
: A body of impermeable or distinctly less-permeable material stratigraphically adjacent to one or more aquifers.

consequence
: The result or effect (especially projected exposure to radiological or chemical hazards) of a release of hazardous materials to the environment.

constituents
: Parts or components of a whole.

critical
: Describing the condition when fissile materials exposed to neutron bombardment produce enough neutrons to support a chain reaction.

criticality
: A state in which a self-sustaining nuclear chain reaction is achieved.

crop
: A process that cuts off or otherwise removes the hardware on the fuel assemblies, leaving primarily the active fuel for subsequent processes.

cumulative impacts
: Additive impacts on the environment including ecological, human health, or socioeconomic effects that result from the addition of the impact of the proposed action to impacts from other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes the other actions (40 CFR 1508.7).

curie (Ci)
: A unit of radioactivity equal to 37,000,000,000 disintegrations per second (or becquerels).

daughter
: A nuclide formed by the radioactive decay of another nuclide, which is the “parent.”

decay heat

The radioactive decay of fission products can produce very high temperatures (decay heat), which is why fuel recently removed from a reactor is placed in underwater storage for cooling. Without active cooling, the fuel could overheat and melt or damage the cladding. After a sufficient cooling time that depends on the burnup of the fuel and its composition, fuel assemblies can be stored dry. Dry fuel storage technologies must consider decay heat.

decay, radioactive

The spontaneous transformation of one nuclide into a different nuclide or into a different energy state of the same nuclide. The process results in the emission of nuclear radiation (usually alpha, beta, or gamma radiation).

decibel

A unit for measuring the relative loudness of sounds. In general, a sound doubles in loudness for every increase of 10 decibels.

decision maker

Group or individual responsible for making a decision on a particular proposed action. Decision makers include DOE officials as specified in DOE Order 451.1A; elected officials; Federal, state, and local agency representatives; and the public.

decommissioning

The removal from service of facilities such as processing plants, waste tanks, and burial grounds, and the reduction or stabilization of radioactive contamination. Decommissioning includes decontamination, dismantling, and return of the area to original condition without restrictions or partial decontamination, isolation of remaining residues, and continuation of surveillance and restrictions.

Defense Waste Processing Facility

Savannah River Site facility that processes high-level radioactive waste into a glass form for transport to a permanent disposal site.

deflagration

Rapid burning with great heat and intense light.

demographic

Related to the statistical study of human populations, including size, density, distribution, and vital statistics such as age, gender, and ethnicity.

depleted uranium

A mixture of uranium isotopes where uranium-235 represents less than 0.7 percent of the uranium by mass.

derived concentration guide (DCG)

The concentration of a radionuclide in air or water that, under conditions of continuous exposure for one year by one exposure mode (i.e., ingestion of water, submersion in air, or inhalation), would result in an effective dose equivalent of 100 mrem (0.1 rem = 1 mSv [milliSievert]).

disassociate

Separate chemicals into their elemental or ionic state.

dose

The energy imparted to matter by ionizing radiation. The unit of absorbed dose is the rad, equal to 0.01 joule per kilogram of irradiated material in any medium.

dose conversion factor

Factor used to calculate the dose received from exposure to radiation.

dose equivalent

A term used to express the amount of effective radiation when modifying factors have been considered. It is the product of absorbed dose (rads) multiplied by a quality factor and other modifying factors. It is measured in rem (*R*oentgen *e*quivalent *m*an).

dose rate

The radiation dose delivered per unit time (e.g., rem per year).

ecology

The science that deals with the relationship of living things with each other and with their environment.

ecosystem

A complex of the communities of living things and their environment which forms a functioning whole in nature.

effective dose equivalent

A quantity used to estimate the biological effect of ionizing radiation. It is the sum over all body tissues of the product of absorbed dose, the quality factor (to account for the different penetrating abilities of the various radiations), and the tissue weighting factor (to account for the different radiosensitivity of the various tissues of the body).

effective porosity

A property of earth containing interconnecting interstices, expressed as a percent of bulk volume occupied by the interstices.

effluent

Liquid or airborne material released to the environment. In general usage, however, effluent implies liquid releases.

electron

An elementary particle with a mass of 9.107×10^{-28} gram (or 1/1837 of a proton) and a negative charge. Electrons surround the positively charged nucleus and determine the chemical properties of the atom.

element

One of the 109 known chemical substances that cannot be divided into simpler substances by chemical means. All isotopes of an element have the same atomic number (number of protons) but have different numbers of neutrons.

Emergency Response Planning Guideline (ERPG) values

These values, which are specific for each chemical, are established for three general severity levels: exposure to concentrations greater than ERPG-1 values for a period of time greater than 1 hour re-

sults in an unacceptable likelihood that a person would experience mild transient adverse health effects, or perception of a clearly defined objectionable odor; exposure to concentrations greater than ERPG-2 values for a period of time greater than 1 hour results in an unacceptable likelihood that a person would experience or develop irreversible or other serious health effects, or symptoms that could impair one's ability to take protective action; exposure to concentrations greater than ERPG-3 values for a period of time greater than 1 hour results in an unacceptable likelihood that a person would experience or develop life-threatening health effects.

emission standards

Legally enforceable limits on the quantities and kinds of air contaminants that may be emitted to the atmosphere.

endangered species

Plants or animals that are in danger of extinction through all or a significant portion of their ranges and that have been listed as endangered by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

energy

The capacity to produce heat or do work.

enrichment

A process in which the fraction of the uranium-235 isotope has been artificially increased above the natural abundance level of 0.72 percent.

environment

The sum of all external conditions and influences affecting the life, development, and ultimately the survival of an organism.

environmental impact statement (EIS)

A detailed written statement as required by Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, to assess the environmental impacts of major Federal 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 strength.

exposure to radiation

The incidence of radiation on living or inanimate material by accident or intent. Background exposure is the exposure to natural background ionizing radiation. Occupational exposure is the exposure to ionizing radiation that occurs at a person's workplace. Population exposure is the exposure to a number of persons who inhabit an area.

external initiators

Accidental occurrences that are independent of facility operations and normally originate outside the facility (aircraft crashes, nearby explosions, and toxic chemical releases at nearby facilities that

affect worker performance); some can affect the ability of the facility to maintain confinement of hazardous materials because of structural damage.

fault

A fracture or a zone of fractures within a rock formation along which vertical, horizontal, or transverse slippage of the earth's crust has occurred in the past.

fertile

Describing radionuclides that can be converted into fissile material (e.g., thorium-232 and uranium-238 can be converted through neutron capture to uranium-233 and plutonium-239, respectively).

fissile

Capable of being split or divided (fissioned) by the absorption of thermal neutrons. The most common fissile materials are uranium-233, uranium-235, and plutonium-239.

fission

The splitting of a heavy nucleus into two approximately equal parts, which are nuclei of lighter elements, accompanied by the release of energy and generally two or more neutrons. Fission can occur spontaneously or can be induced by nuclear bombardment.

fission chain reaction

Nuclear reaction in which atomic nuclei in reactor fuel respond to collisions with neutrons by splitting into two or three major fragments and additional neutrons accompanied by the emission of gamma radiation.

fission fragments

The parts into which atomic nuclei in reactor fuel split during a fission chain reaction.

fission products

Nuclei from 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.

gamma (γ) rays

High-energy, short-wavelength electromagnetic radiation accompanying fission, radioactive decay, or nuclear reactions. Gamma rays are very penetrating and require relatively thick shields to absorb the rays effectively.

geology

The science that deals with the earth: the materials, processes, environments, and history of the planet, especially the lithosphere, including the rocks, their formation and structure.

groundwater

The supply of fresh water below the earth's surface in an aquifer.

habitat

The place or type of site where a plant or animal normally grows or lives.

half-life (radiological)

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

hazardous material

A substance or a material including a hazardous substance that has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.

hazardous substance

Any substance that when released to the environment in an uncontrolled fashion could be harmful to the biota or human health and when released in an 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 waste

Waste that is regulated under the Resource Conservation and Recovery Act and corresponding state regulations. Waste is hazardous if the EPA lists it as such or if it exhibits the characteristic(s) of ignitability, corrosivity, reactivity, or toxicity. SRS hazardous waste streams consist of a variety of materials, including mercury, chromates, lead, paint solvents, and various laboratory chemicals.

heavy metal

In this document, heavy metal refers to materials of high atomic number that were placed in nuclear reactors. This includes thorium, uranium, and plutonium.

high efficiency particulate air (HEPA) filter

A type of filter designed to remove 99.95 percent of the particles down to 0.3 micrometer in diameter from a flowing air stream.

high(ly) enriched uranium

Uranium that is equal to or greater than 20 percent uranium-235 by weight. Many of the fuels discussed in this EIS are based primarily on highly enriched uranium.

high-level radioactive waste

Highly radioactive material from the processing of spent nuclear fuel that contains a combination of transuranic waste and fission products in concentrations that require permanent isolation. It includes both liquid waste produced by processing and solid waste derived from that liquid.

hydraulic conductivity

The rate of water flow in gallons pre day through a cross-section of 1 square foot under a unit hydraulic gradient, also known as permeability coefficient.

hydraulic gradient

With regard to an aquifer, the rate of change of pressure head per unit distance of flow at a given point and in a given direction.

infrastructure

The system of public works of a county, state, or region; also, the resources (buildings or equipment) required for an activity.

interim storage
: Safe and secure storage for spent nuclear fuel and radioactive wastes until the materials are dispositioned (treatment and/or disposal).

internal initiators
: Events that normally originate in and around the facility but are always a result of facility operations (equipment or structural failures, human errors, internal flooding). In accident scenarios, initiators start the events that culminate in a release of hazardous or radioactive materials.

involved worker
: An individual located in the facility under discussion.

ion
: An atom or molecule that has gained or lost one or more electrons to become electrically charged.

ionizing radiation
: Radiation capable of ejecting electrons from atoms or molecules to produce ions.

irradiation
: Exposure to radiation.

isotope
: An atom of a chemical element with a specific atomic number and atomic weight. Isotopes of the same element have the same number of protons but different numbers of neutrons (i.e., the same atomic number, but different mass numbers). Isotopes are identified by the name of the element and the total number of protons and neutrons in the nucleus. For example, plutonium-239 is a plutonium atom with 239 protons and neutrons.

isotopic dilution
: Mixing a less-enriched radioisotope with a highly enriched radioisotope to yield an isotope with lower nuclear enrichment.

latent cancer fatalities
: Deaths resulting from cancers that became active sometime after the exposure presumed to have induced them.

long-lived radionuclides
: Radioactive isotopes with half-lives greater than about 30 years.

low-enriched uranium (LEU)
: Uranium with uranium-235 enriched above the natural concentration (0.72 percent) but below 20 percent; highly enriched uranium (HEU) is enriched 20 percent or higher.

low-income community
: A community where 25 percent or more of the population is identified as living in poverty.

low-level mixed waste

Radioactive waste that contains material listed as hazardous under the Resource Conservation and Recovery Act or that exhibits one or more of the following hazardous waste characteristics: ignitability, corrosivity, reactivity, or toxicity. It includes such materials as tritiated mercury, tritiated oil contaminated with mercury, other mercury-contaminated compounds, or radioactively-contaminated lead shielding.

low-level radioactive waste

Radioactive waste that cannot be classified as high-level waste, spent nuclear fuel, transuranic waste, or byproduct material, and that does not have any constituents that are regulated under the Resource Conservation and Recovery Act.

materials test reactor equivalent (MTRE)

A quantity of spent nuclear fuel related to its volume that provides information on the amount of storage space provided.

MAXIGASP

A computer program used to calculate doses of airborne releases of radioactivity to the maximally exposed member of the public.

maximally exposed individual

A hypothetical person located to receive the maximum possible dose by a given exposure scenario.

maximum contaminant levels (MCLs)

The maximum permissible level of a contaminant in water that is delivered to a user of a public water system.

metric tons of heavy metal (MTHM)

Quantities of unirradiated and spent nuclear fuel and targets 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 travel of a material through the air, soil, or water.

millirem

One thousandth of a rem. (See rem.)

minority community

A person classified by the U.S. Bureau of the Census as Black, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut, or other nonwhite persons is considered a minority. A community with the number of minority persons equal to or greater than the minority average of a defined area or jurisdiction (usually a state) is a minority community.

moderation

Process for slowing down neutrons resulting from fission or other nuclear reactions; slow or "thermal" neutrons are necessary for sustaining a fission chain reaction in fissile materials; water and heavy water are common moderators.

monitoring
: Continuing control and accountability, particularly of special nuclear materials such as plutonium-239 and highly enriched uranium, but also including oversight of hazardous or reactive compounds before they are disposed of or converted to a stable long-term storage form.

National Ambient Air Quality Standards
: Air quality standards established by the Clean Air Act, as amended in 1990. The primary National Ambient Air Quality Standards are intended to provide the public with an adequate margin of safety, and the secondary National Ambient Air Quality Standards are intended to protect the public from known or anticipated adverse impacts of a pollutant.

National Pollutant Discharge Elimination System
: Federal system that permits liquid effluents regulated through the Clean Water Act, as amended.

natural phenomena initiators
: Natural occurrences that are independent of facility operations and events at nearby facilities or operations (earthquakes, high winds, floods, lightning, snow). Although these initiators are independent of external facilities, they can affect such facilities and compound the progression of the accident.

natural radiation or natural radioactivity
: Background radiation. Radiation arising from cosmic and terrestrial naturally-occurring radionuclide sources.

National Environmental Policy Act (NEPA)
: The National Environmental Policy Act of 1969 (42 USC 4321) requires the preparation of an EIS for Federal projects that could incur significant impacts to the environment.

neutron
: An elementary nuclear particle capable of inducing a fission chain reaction in certain atomic nuclei, including uranium-235.

neutron poison
: A substance that absorbs neutrons without causing a fission, thereby preventing nuclear criticalities.

noninvolved worker
: For this EIS, an SRS worker who is not involved in a given operation or activity.

nonproliferation
: The restriction of access to fissile materials in concentrations sufficient to assemble a nuclear weapon.

Nuclear Regulatory Commission
: The independent Federal commission that licenses and regulates commercial nuclear facilities.

nuclear radiation
: Radiation, usually alpha, beta, or gamma, that emanates from an unstable atomic nucleus.

nuclear reaction
: An interaction between a photon, particle, or nucleus and a target nucleus, leading to transmutation.

nuclear reactor
: A device in which a fission chain reaction is maintained, used for the irradiation of materials or the generation of electricity.

nuclide
: A species of atom characterized by the number of protons, number of neutrons and by energy content in the nucleus; a radionuclide is a radioactive nuclide.

offsite population
: Defined as all individuals located within an 80-kilometer (50-mile) radius of a facility with potential to emit radioactive material.

organic compounds
: Chemical compounds containing hydrocarbons.

ozone
: A compound of oxygen in which three oxygen atoms are chemically attached to each other.

oxides of nitrogen (NO_x)
: Primarily nitrogen oxide (NO) and nitrogen dioxide (NO_2), these compounds are produced in the combustion of fossil fuels, and contribute to air pollution.

particulates
: Solid particles and liquid droplets small enough to become airborne.

passivation
: To reduce the reactivity of a chemically-active metal.

pellets
: One configuration of the reactive material in a target rod.

permeability
: A measure of a material's ability to have liquids or gases passes through it via pores or openings.

person-rem
: The radiation dose to a given population; the sum of the individual doses received by a population.

plutonium (Pu)
: A transuranic, heavy (average atomic mass about 244 atomic mass units), silvery metal with 15 known isotopes that is produced by the neutron irradiation of natural uranium. Plutonium-239 is used both in nuclear weapons and commercial nuclear power applications. Plutonium-238 is used to power onboard electric generators during manned and unmanned space flights.

poison
: A material that has an affinity for absorbing neutrons. Poisons are added to nuclear materials with a potential criticality concern to lessen the likelihood of an uncontrolled nuclear reaction.

pollution
: The addition of an undesirable agent to an ecosystem in excess of the rate at which natural processes can degrade, assimilate, or disperse it.

POPGASP
: A computer model used to calculate doses of airborne releases of radioactivity to the population within 80 kilometers (50 miles) of the SRS.

population
: In this EIS, a collection of members of the public that is located outside the boundaries of the SRS. Impacts in this EIS are estimated for the population within a given area, depending on the appropriate environmental pathways. For example, the affected population for liquid releases to the Savannah River includes downstream residents.

Prevention of Significant Deterioration (PSD)
: A standard that establishes the acceptable amount of deterioration in air quality. When the air quality of an area meets the standards for a specific pollutant, the area is declared to be in attainment for that pollutant. When the air quality of an area does not meet the standard for a specific pollutant, the area is said to be in nonattainment for that pollutant. PSD requirements define maximum allowable increases (increments) in ambient air pollutant concentrations (sulfur dioxide, particulate, nitrogen oxide) for construction or modification of facilities which by definition do not "significantly deteriorate" the existing baseline air quality.

processing (of spent nuclear fuel)
: Applying a chemical or physical process designed to alter the characteristics of the spent fuel matrix.

production well/water
: At the SRS, water treated and used as potable water.

programmatic materials
: Stable nuclear materials with value for supporting national programs (e.g., plutonium-238 production for the National Aeronautics and Space Administration).

proton
: A nuclear particle with a positive charge equal in magnitude to the negative charge of the electron; it is a constituent of all atomic nuclei, and the atomic number of an element indicates the number of protons in the nucleus of each atom of that element.

pyrophoric
: The tendency to spontaneously ignite in air. Some uranium and thorium metal fuels may be pyrophoric.

radiation
: The emitted particles and photons from the nuclei of radioactive atoms; a shortened term for ionizing radiation or nuclear radiation as distinguished from nonionizing radiation (microwaves, ultraviolet rays, etc.).

radiation shielding
: Radiation-absorbing material that is interposed between a source of radiation and organisms that would be harmed by the radiation (e.g., people).

radioactive waste
: Waste that has radioactive material and must be handled as such.

radioactivity
: The spontaneous decay of unstable atomic nuclei, accompanied by the emission of radiation.

radioisotope
: Radioactive isotopes. The isotopes of an element that are radioactive. Not all isotopes of a single element are radioactive. Some radioisotopes are naturally occurring (e.g., potassium-40) while others are produced by nuclear reactions.

radiolysis
: Decomposition of a material by ionizing radiation.

radionuclide
: A nuclide that exhibits radioactivity.

reactor
: A device in which a chain reaction of fissionable material is initiated and controlled; a nuclear reactor.

Record of Decision (ROD)
: A document that provides a concise public record of an agency decision on a proposed action described in an EIS. An ROD identifies the alternatives, the environmentally preferable alternative(s), factors the agency considered in making the decision, and whether the agency has adopted all practicable means to avoid or minimize environmental harm and if not, why not.

recycling
: Return of a waste material either to the process that generated the waste or to another process to use or reuse the waste material beneficially; recovery of a useful or valuable material from waste.

rem
: The unit of radiation dose for biological absorption. It is equal to the product of the absorbed dose in rads, a quality factor and a distribution factor.

remote handling cell
: A room designed so that the process carried out in the room is done remotely by operators manipulating robotic equipment.

repository
: A place for the disposal of immobilized high-level waste and spent nuclear fuel in isolation from the environment.

processing (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 or generation of electricity. Historically, processing has involved aqueous chemical separations of elements (typically uranium or plutonium) from undesired elements in the fuel.

resin
: An ion-exchange medium; organic polymer used for the preferential removal of certain ions from a solution.

Richter Scale
: A scale to quantify earthquake intensity.

risk
: In accident analysis, the probability-weighted consequence of an accident, defined as the accident frequency per year multiplied by the dose. The term "risk" also is used commonly in other applications to describe the probability of an event occurring.

road-ready
: Describing spent nuclear fuel that has been conditioned or treated and placed in a canister in a form such that it can be shipped to a repository.

runoff
: The portion of rainfall, melted snow, or irrigation water that flows across ground surface and eventually returns to streams. Runoff can carry pollutants into receiving waters.

saltstone
: Low-radioactivity fraction of high-level waste mixed with cement, flyash, and slag to form a concrete matrix.

sanitary waste
: Solid waste that is neither hazardous, as defined by the Resource Conservation and Recovery Act, nor radioactive. It consists of salvageable material and material that is suitable for disposition in a municipal sanitary landfill. Sanitary waste streams include such items as paper, glass, discarded office material, and construction debris.

seismicity
: The tendency for earthquakes to occur.

shielded transport casks
: A heavily shielded container designed to hold one or more fuel elements during transport.

short-lived
: A designation for radionuclides with relatively short half-lives (i.e., they decay to other atoms relatively quickly). Radionuclides with half-lives less than approximately 30 years are short-lived.

spent nuclear fuel
: Fuel and targets that have been irradiated in a nuclear reactor. Spent nuclear fuel is highly radioactive.

stabilization
: The action of making a nuclear material more chemically or physically stable by converting its physical or chemical form or placing it in a more stable environment.

strontium
: Naturally occurring element with 38 protons in its nucleus. Some manmade isotopes of strontium are radioactive (e.g., strontium-89, strontium-90).

sulfur dioxide
: A heavy, pungent, toxic gas, used as a preservative or refrigerant, that is an air pollutant.

surface water
: Water on the surface (streams, ponds, etc.), as distinguished from underground water.

tank farm
: An installation of interconnected underground tanks for the storage of high-level radioactive liquid wastes.

target
: In this EIS, a tube of material placed in a reactor for bombardment by neutrons to produce desired radioactive byproducts.

thermal neutrons
: Neutrons that have had excess energy removed by scattering collisions with other atoms and will not slow down any further. Thermal neutrons have an energy of 0.025 electron-volts and are readily absorbed by fissile atoms.

threatened species
: Any species which is likely to become endangered within the foreseen future throughout all or a significant portion of its range, and that has been listed as threatened by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

transmutation
: The conversion of one element to another by means of a nuclear reaction.

transuranic waste
: Waste material containing more than a specified concentration of transuranic elements (elements with higher atomic numbers than uranium) (presently, more than 10 nanocuries per gram of waste).

tritium
: A radioactive isotope of hydrogen; its nucleus contains one proton and two neutrons.

uranium (U)
: A heavy (average atomic mass of about 238 atomic mass units), silvery-white metal with 14 radioactive isotopes. One of the isotopes, uranium-235, is most commonly used as fuel for nuclear fission and another, uranium-238, is transformed into fissionable plutonium-239 following its capture of a neutron in a nuclear reactor.

vault
: A reinforced concrete structure for storing strategic nuclear materials used in national defense or other programmatic purposes or for disposing of radioactive or hazardous waste.

vitrification
: Immobilization by incorporating into glass.

vulnerability
: Condition or weakness that could lead to exposure to radioactive elements by the public, unnecessary or increased exposure to workers, or release of radioactive materials to the environment.

Waste Isolation Pilot Plant (WIPP)
: DOE facility located near Carlsbad, New Mexico, for the safe underground disposal of transuranic waste from numerous facilities owned by DOE.

waste minimization
: Reduction of waste before treatment, storage, or disposal by source reduction or recycling activities.

waste, radioactive
: See "radioactive waste."

water quality standard
: Provisions of state or Federal law that consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon those uses. Water quality standards are used to protect the public health or welfare, enhance the quality of water, and serve the purposes of the Act.