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## 8. GLOSSARY

***Abnormal transients***—An unusual incident in which operating parameters affecting control of radioactive materials move out of the normal operating range.

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

***Actinide***—Any of a series of chemically similar, mostly synthetic, radioactive elements with atomic numbers ranging from actinium (89) through lawrencium (103).

***Acute exposure***—A single exposure to a toxic substance that may result in severe biological harm or death. Acute exposures are usually characterized as lasting no longer than a day.

***Air quality standards***—The prescribed quantity of pollutants in the air that cannot be exceeded legally during a specified time in a specified area.

***Alpha emitter***—A radioactive substance that decays by releasing an alpha particle.

***Alpha particle***—A particle consisting of two protons and two neutrons, given off by the decay of many elements, including uranium, plutonium, and radon. Alpha particles cannot penetrate a sheet of paper. However, alpha emitting isotopes in the body can be very damaging.

***Ambient air***—The surrounding atmosphere, usually the outside air, as it exists around people, plants, and structures.

***Americium***—A manmade element. Americium is a metal that is slightly heavier than lead. Americium-241 is produced by the radioactive decay of plutonium-241; in addition to being an alpha-emitter, it is an emitter of gamma rays. Americium-241 has a half-life of 433 years.

***Aquifer***—A geologic formation that contains sufficient saturated permeable material to conduct groundwater and to yield worthwhile quantities of groundwater to wells and springs.

***As low as reasonably achievable (ALARA)***—The approach to radiation protection to manage and control exposures (both individual and collective) to the work force and to the general public to as low as is reasonable, taking into account social, technical, economic, practical, and public policy considerations. ALARA is not a dose limit, but a process that has the objective of attaining doses as far below the applicable limits as is reasonably achievable.

***Ash residues***—This category of residues includes incinerator ash; inorganics; sand, slag, and crucible; graphite fines; and firebrick. These residues are grouped together because of the similar methods in which the residues will be treated and/or repackaged.

***Atomic Energy Act (AEA)***—A law originally enacted in 1946 and amended in 1954 that placed nuclear production and control of nuclear materials within a civilian agency, originally the Atomic Energy Commission. The Atomic Energy Commission was replaced by the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy.

**Atomic number**—The number of positively charged protons in the nucleus of an atom or the number of electrons on an electrically neutral atom.

**Background radiation**—Radiation from: (1) naturally occurring radioactive materials including radon, (2) cosmic sources, (3) global fallout as it exists in the environment (e.g., from the testing of nuclear explosive devices), and (4) consumer products containing nominal amounts of radioactive material or producing nominal amounts of radiation.

**Beta emitter**—A radioactive substance that decays by releasing a beta particle.

**Beta particle**—A particle emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a small ability to penetrate other materials.

**Blend down**—A process in which an appropriate material is added to a plutonium-bearing material to reduce the concentration of plutonium in the material. The quantity of plutonium in the material remains the same while the total quantity of material increases.

**Bounded**—Producing the greatest consequences of any assessment of impacts associated with normal or abnormal operations.

**Button**—Plutonium metal in a hemispherical shape, weighing approximately 1.8 kilograms (4 pounds).

**Calcination**—A process in which a material is heated to a high temperature to drive off volatile matter (to remove organic material) or to effect changes (as oxidation or pulverization or to convert it to nodular form). Calciners and nodulizing kilns are considered to be similar units. The temperature is kept below the fusion point.

**Canister**—A stainless-steel container in which nuclear material is sealed.

**Canyon**—A heavily shielded building at the Savannah River Site used in the chemical processing of radioactive materials to recover special isotopes. Operation and maintenance are performed by remote control.

**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) above, such that movement on one could be reasonably expected to be accompanied by movement on the other.

**Cask**—A heavily shielded massive container for holding nuclear materials during shipment.

**Cementation**—A process in which cement and water are added to a plutonium-bearing material to create a concrete or grout material form.

**Ceramification**—A process in which an inorganic oxide is heated at high temperatures to the point at which oxide particles begin to fuse together. This forms a ceramic material.

**Characterization**—The determination of waste or residue composition and properties, whether by review of process knowledge, nondestructive examination or assay, or sampling and analysis, generally done to determine appropriate storage, treatment, handling, transportation, and disposal requirements.

**Cold Ceramification**—A process that stabilizes materials (e.g., residues) by converting them into chemically bonded phosphate ceramics.

**Collective dose**—The sum of the total effective dose equivalents of all individuals in a specified population. Collective dose is expressed in units of person-rem.

**Committed effective dose equivalent**—The sum of the committed dose equivalents to various tissues in the body, each multiplied by the appropriate weighting factor. Committed effective dose equivalent is expressed in units of rem, and will be accumulated during the 50 years following an intake of radioactive material into an individual's body. Used in cases when a person has an intake of radioactive material to denote that the dose is calculated for a period of 50 years following the intake. (See effective dose equivalent.)

**Community (environmental justice definition)**—A group of people or a site within a spatial scope 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.

**Contact-handled waste**—Packaged waste whose external surface dose rate does not exceed 200 mrem per hour.

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

**Criteria pollutants**—Six air pollutants for which national ambient air quality standards are established by EPA: sulfur dioxide, nitric oxides, carbon monoxide, ozone, particulate matter less than or equal to 10 microns in diameter, and lead.

**Criticality**—The conditions in which a system is capable of sustaining a nuclear chain reaction.

**Cultural resources**—Archaeological sites, architectural features, traditional use areas, and Native American sacred sites.

**Cumulative impacts**—The impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

**Curie**—The basic unit used to describe the intensity of radioactivity in a sample of material. The curie is equal to 37 billion disintegrations per second, which is approximately the rate of decay of 1 gram of the isotope radium-226. A curie is also a quantity of any radionuclide that decays at a rate of 37 billion disintegrations per second.

**Decay (radioactive)**—Spontaneous disintegration of the nucleus of an unstable atom, resulting in the emission of particles and energy.

**Decommissioning**—Retirement of a facility, including any necessary decontamination and/or dismantlement.

**Decontamination**—Removal of unwanted radioactive or hazardous contamination by a chemical or mechanical process.

**Depleted uranium**—Uranium that, through the process of enrichment, has been stripped of most of the uranium-235 it once contained, so that it has more uranium-238 than natural uranium. It is used as shielding, in some parts of nuclear weapons, and as a raw material for plutonium production.

**Digestion**—A process that results in the destruction of an organic matrix by heating with an oxidizing acid such as nitric acid.

**Discounted dollars**—The process of converting a dollar or a stream of dollars at some future date or dates to a single present value (the Net Present Value). The factor used to convert the stream is the discount rate, often called the weighted cost of capital.

**Dissolution**—A process in which a material is dissolved. In this EIS, it refers to dissolving salts away from plutonium oxide. The material is first heated in air to convert any plutonium metal to plutonium oxide. Then the salt is dissolved away with water leaving plutonium oxide.

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

**Dose (or radiation dose)**—A generic term that means absorbed dose, effective dose equivalent, committed effective dose equivalent, or total effective dose equivalent as defined elsewhere in this glossary.

**Dose rate**—The radiation dose delivered per unit time (e.g., rem per year).

**Ecology**—The relationship of living things to each other and to the environment or the study of such relationships.

**Ecosystem**—A complex of the community of living things and the environment forming a functioning whole in nature.

**Effective dose equivalent**—The summation of the products of the dose equivalent received by specified tissues of the body and the appropriate weighting factors. It includes the dose from radiation sources internal and/or external to the body. The effective dose equivalent is expressed in units of rem.

**Effluent**—A gas or liquid discharged into the environment.

**Endangered species**—Animals, birds, fish, plants, or other living organisms threatened with extinction by manmade or natural changes in their environment. Requirements for declaring a species endangered are contained in the Endangered Species Act, as amended (16 U.S.C. 1531 et seq.), and in similar State laws.

**Enriched uranium**—Uranium that has greater amounts of the isotope uranium-235 than occur naturally. Naturally occurring uranium is nominally 0.720 percent uranium-235.

**Environmental Impact Statement (EIS)**—A document required of Federal agencies by NEPA for major Federal actions or legislation with potential for significantly affecting the environment. A tool for decisionmaking, it describes the potential impacts of the proposed and alternative actions.

**Environmental monitoring**—The process of sampling and analysis of environmental media in and around a facility for the purpose of (1) determining compliance with performance objectives and (2) detection of environment contamination to facilitate timely remedial action.

**Epidemiology**—The science concerned with the study of the causes, frequency, and distribution of disease, injury, and other health-related events in the human population.

**Escalation**—A real increase in the price of a good or service, over and above the increase attributable to inflation.

**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.

**Fissile material**—Any material fissionable by thermal (slow) neutrons; the two primary fissile isotopes are uranium-235 and plutonium-239.

**Fission**—The splitting or breaking 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**—The nuclei produced by fission of heavy elements, and their radioactive decay products.

**Fissionable material**—Commonly used as a synonym for fissile material, the meaning of this term has been extended to include material that can be fissioned by fast neutrons, such as uranium-238.

**Frit**—Finely ground glass used as feedstock input for vitrification.

**Ful Flo filter**—A filter used to remove particulates that are 1 to 5 microns and larger, from liquid streams. The filter is packed with activated charcoal/graphite or fiberglass.

**Gamma ray**—Very penetrating electromagnetic radiation of nuclear origin. Except for origin and energy level, identical to x-rays. Electromagnetic radiation frequently accompanying alpha and beta emissions as radioactive materials decay.

**Geologic repository**—A place to dispose of radioactive waste deep beneath the earth's surface.

**Glovebox**—Large enclosure that separates workers from equipment used to process hazardous material while allowing the workers to be in physical contact with the equipment; normally constructed of stainless steel with large acrylic/lead glass windows. Workers have access to equipment through the use of heavy-duty, lead-impregnated rubber gloves, the cuffs of which are sealed in portholes in the glovebox windows.

**Gray**—A unit of absorbed dose (see Rad).

**Ground shine**—The radiation dose received from radioactive material deposited on the ground's surface.

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

**Hazard index (HI)**—A summation of the hazard quotient for all chemicals to be used at a given time at a site to yield cumulative levels for a site. An HI value of 1.0 or less means that no adverse human health effects (non-cancer) are expected to occur.

**Hazard quotient (HQ)**—The value used as an assessment of non-cancer associated toxic effects of chemicals (e.g., kidney or liver dysfunction). It is independent of a cancer risk, which is calculated only for those chemicals identified as carcinogens.

**Hazardous material**—A substance or material in a quantity and form that may pose an unreasonable risk to health and safety or property when transported in commerce.

**Hazardous substance**—Any substance subject to the reporting and possible response provisions of the Clean Water Act, and the Comprehensive Environmental Response, Compensation, and Liability Act.

**Hazardous waste**—Under the Resource Conservation and Recovery Act, a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Source, special nuclear material, and by-product material, as defined by the Atomic Energy Act, are specifically excluded from the definition of solid waste.

**High-efficiency particulate air (HEPA) filter**—A filter with an efficiency of at least 99.95 percent used to remove particles from air exhaust streams prior to releasing to the atmosphere.

**High-level waste**—The highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly from reprocessing and any solid waste derived from the liquid that contains a combination of transuranic and fission product nuclides in quantities that require permanent isolation. High-level waste may include the highly radioactive material that the NRC, consistent with existing law, determines by rule requires permanent isolation.

**Immobilization**—A process that converts plutonium-bearing material to a stable form for disposal.

**Inflation**—A change in the nominal price level of all goods or services, unrelated to the real escalation of a particular good or service.

**Inorganic residues**—This category includes all inorganic residues resulting from direct production operations.

**Isotopes**—Different forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope. Many isotopes that do not exist in nature have been produced in reactors and particle accelerators.

| **Lag Storage**—Short-term storage for logistical reasons.

**Latent cancer fatalities (LCF)**—Deaths occurring at later years from radiation-induced cancers.

**Levelization**—Conversion of a stream of values that vary at a uniform rate over time to a constant value over the same period of time.

**Low enriched uranium (LEU)**—Uranium enriched until it consists of up to 20 percent uranium-235. Used as nuclear reactor fuel.

**Low-income community**—Low income populations in an affected area should be identified with the annual statistical poverty thresholds from the *Bureau of the Census Current Population Reports, Series P-60 on Income and Poverty*.

**Low-level waste**—Any radioactive waste that is not spent fuel, high-level, or transuranic waste, and does not contain hazardous waste constituents.

**Management Approach**—Refer to strategic management approach.

**Maximally exposed individual (MEI)**—A hypothetical individual receiving the maximum exposure.

**Maximum contaminant level (MCL)**—The maximum permissible levels of a contaminant in water that is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under the circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

**Mediated electrochemical oxidation (MEO)**—A treatment process in which silver ions are used as catalysts to dissolve plutonium oxide and to destroy organic materials.

**Micron**—One-millionth of a meter.

**Millirad (mrad)**—One-thousandth of a rad.

**Millirem (mrem)**—One-thousandth of a rem.

**Mitigate**—To take practicable means to avoid or minimize the potentially harmful effects of an action (e.g., environmental harm from a selected alternative).

**Mixed Oxide (MOX)**—A physical blend of uranium oxide and plutonium oxide which can be used as fuel in a nuclear reactor.

**Mixed waste**—Waste that contains both "hazardous waste" and "radioactive waste" (as defined in this glossary).

**Muffle furnaces**—Small (approximately 1 cubic foot) oven-like electrically-heated units, lined with refractory material, which can be used to heat material placed onto trays inserted into the unit.

**National Environmental Policy Act (NEPA)**—A Federal law, enacted in 1970, that requires the Federal Government to consider the environmental impacts of, and alternatives to, major proposed actions in its decisionmaking processes. Commonly referred to by its acronym, NEPA.

**Natural phenomena accidents**—Accidents that are initiated by phenomena such as earthquakes, tornadoes, floods, etc.

**Net present value**—The value of a series of future income and expense streams brought forward to the present at the discount rate.

**Neutron**—An uncharged elementary particle with a mass slightly greater than that of the proton. Neutrons are found in the nucleus of every atom heavier than hydrogen-1.

**Nonproliferation**—Efforts to prevent or slow the spread of nuclear weapons and the materials and technologies used to produce them.

**Normal operation**—All normal conditions and those abnormal conditions that frequency estimation techniques indicate occur with a frequency greater than 0.1 events per year.

**Nuclear weapon**—Any weapon in which the explosion results from the energy released by reactions involving atomic nuclei.

**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.

**Package**—For radioactive materials, the packaging together with its radioactive contents as presented for transport (the packaging plus the radioactive contents is the package).

**Packaging**—For radioactive materials, it may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shock to ensure compliance with U.S. Department of Transportation regulations.

**Pipe and Go**—A term used to describe the repackaging (without further processing) of certain ash and pyrochemical salts into pipe components and then drums, followed by shipment of these loaded drums to WIPP.

**Plume immersion**—Occurs when an individual is enveloped by a cloud of radioactive gaseous effluent and receives an external radiation dose.

**Plutonium**—A manmade fissile element. Pure plutonium is a silvery metal that is heavier (for a given volume) than lead. Material rich in the plutonium-239 isotope is preferred for manufacturing nuclear weapons. Plutonium-239 has a half-life of 24,000 years.

**Plutonium residues**—Material containing plutonium that was generated during the separation and purification of plutonium or during the manufacture of plutonium-bearing components for nuclear weapons.

**Population dose**—See collective dose.

**Probable maximum flood**—The largest flood for which there is any reasonable expectancy in a specific area. The probable maximum flood is normally several times larger than the largest flood of record.

**Process**—Any method or technique designed to change the physical or chemical character of the residue or scrub alloy to render them less hazardous, safer to transport, store or dispose of, and/or less attractive for theft.

**Processing Option**—A specific technology (e.g., vitrification, water leach, Purex) that can be used to process a particular category of plutonium residues or scrub alloy (e.g., ash, salt, scrub alloy).

**Purex**—An acronym for Plutonium-Uranium Extraction, the name of the chemical process usually used to remove plutonium and uranium from spent nuclear fuel, irradiated targets, and other nuclear materials. As used in this EIS, the PUREX process is used to separate out plutonium from residues or scrub alloy.

**Pyro-oxidation**—A process in which sodium carbonate is heated with a plutonium-bearing salt matrix to a high temperature to convert any reactive metals in the matrix to nonreactive oxides.

**Pyrophoric**—Pyrophoric liquids are any liquids that ignite spontaneously in dry or moist air at or below 54.4 degrees Centigrade (130 degrees Fahrenheit). A pyrophoric solid is any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

**Rad**—A unit of absorbed dose. It corresponds to an energy absorption of 100 ergs per gram in any medium (1 rad = 0.01 gray).

**Radiation (ionizing)**—Energy transferred through space or other media in the form of particles or waves. In this document, we refer to ionizing radiation that is capable of breaking up atoms or molecules. The splitting, or decay, of unstable atoms emits ionizing radiation.

**Radioactive waste**—Waste that is managed for its radioactive content; solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act of 1954, as amended and of negligible economic value considering costs of recovery.

**Radioactivity**—The spontaneous emission of radiation from the nucleus of an atom. Radionuclides lose particles and energy through this process of radioactive decay.

**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 that can be manmade or naturally occurring.

**Raschig (glass) rings**—These residues originated from Process Vent Scrubber Systems and in plutonium solutions processing production tanks. The rings are small, hollow, borosilicate glass cylinders that are used to absorb neutrons and thus prevent criticality in the aforementioned production tanks. These rings are coated with insoluble plutonium compounds.

**Record of Decision (ROD)**—A document prepared in accordance with the requirements of 40 CFR 1505.2 and 10 CFR 1021.315 that provides a concise public record of DOE's decision on a proposed action for which an EIS was prepared. A ROD identifies the alternatives considered in reaching the decision, the environmentally preferable alternative, factors balanced by DOE in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and, if not, why they were not.

**Region of influence**—Region in which the principal direct and indirect socioeconomic effects of actions are likely to occur and are expected to be of consequence for local jurisdictions.

**Regulated substances**—A general term used to refer to materials other than radionuclides that may be regulated by other applicable Federal, State, (or possibly local) requirements.

**rem (Roentgen Equivalent Man)**—A unit of radiation dose. Dose in rem is numerically equal to the absorbed dose in rad multiplied by a quality factor, distribution factor and any other necessary modifying factors (1 rem = 0.01 sievert).

**Repackage**—A process in which some residue materials may be removed from their current packaging containers and placed in new containers for improved safe secure storage or to meet packaging requirements for shipment.

**Resource Conservation and Recovery Act (RCRA) as Amended**—The statute or law that establishes, among other things, a system for managing hazardous waste from its generation until its ultimate disposal.

**Risk**—Expression of an impact that considers both the probability of that impact occurring and the consequences of the impact if it does occur.

**Risk assessment (chemical or radiological)**—The qualitative and/or 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 pollutants.

**Safe, secure trailer (SST)**—A specially designed semitrailer, pulled by a specially designed tractor, that is used for the safe, secure transportation of cargo containing nuclear weapons or special nuclear material.

**Safeguards termination limit (STL)**—Concentrations of plutonium in materials (by weight percent), above which the material would be attractive as a source of plutonium.

**Salt distillation**—A process that separates transuranic materials from a salt matrix by distilling the salt away from any metal oxides present in the salt.

**Salt scrub**—A process used to recover plutonium from salt residues. The salt is heated with a mixture of aluminum and magnesium. The magnesium reacts with plutonium chloride in the salt to form plutonium metal, which forms an alloy with the aluminum called scrub alloy.

**Saltstone**—Low-radioactivity fraction of high-level waste formed into a concrete block at the Savannah River Site.

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

**Scrub alloy**—A magnesium/aluminum/americium/plutonium metal mixture that was created as an interim step in plutonium recovery.

**Seismicity**—The tendency for the occurrence of earthquakes.

**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.

**Shredding**—A process in which materials are cut into small pieces, which have a combined surface area larger than the original materials.

**Sievert**—A unit of radiation dose (1 sievert = 100 rem).

**Slope factor**—An upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-level bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen.

**Sonic wash**—A process that uses sound waves to agitate an aqueous slurry of contaminated materials. It helps to remove plutonium compounds more efficiently from the surface of the contaminated materials.

**Source term**—The estimated quantities of radionuclides or chemical pollutants released to the environment.

**Special nuclear material (SNM)**—Plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the Nuclear Regulatory Commission, pursuant to the provisions of the Atomic Energy Act of 1954, Section 51, determines to be special nuclear material.

**Spent fuel standard**—A term, coined by the National Academy of Sciences and modified by DOE, meaning that alternatives for the disposition of surplus weapons-usable plutonium should seek to make this plutonium roughly as inaccessible and unattractive for weapons use as the much larger and growing stock of plutonium in civilian spent nuclear fuel.

| **Stabilized plutonium residues**—As used in this EIS, these are plutonium residues that have been processed to change their physical, chemical or biological character or composition to allow their safe interim storage, but would contain plutonium concentrations in excess of safeguards termination limits. Under Alternative 4, these residues would be disposed at WIPP as transuranic waste.

| **Stabilized residues**—Plutonium residues that have been processed to make them chemically stable.

**Strategic Management Approach**—The compilation of a complete set of processing options (one option for each residue category and for scrub alloy) which allows a specific management criterion to be met (e.g., least overall processing cost, processing with maximum plutonium separation). For completeness and to allow comparisons among management approaches, the eight management approaches evaluated in this EIS include No Action and the preferred management approach.

**Total effective dose equivalent**—The sum of the effective dose equivalent from external exposures and the committed effective dose equivalent from internal exposures.

**Transuranic**—Any element whose atomic number is higher than that of uranium (that is, atomic number 92). All transuranic elements are produced artificially and are radioactive.

**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.

**Type B packaging**—Packaging for radioactive material that meets the standards for Type A packaging and, in addition, meets the standards for the hypothetical accident conditions of transport as prescribed in 49 Code of Federal Regulations Part 173.398(c).

**Type B shipping cask**—An NRC-certified cask with a protective covering that contains and shields radioactive materials, dissipates heat, prevents damage to the contents, and prevents criticality during normal shipment and accident conditions. It is used for transport of highly radioactive materials, and is tested under severe, hypothetical accident conditions that demonstrate resistance to impact, puncture, fire, and submersion in water.

**Undiscounted dollars**—Expressing income and expenditures in the year they occur, not at some common point in time.

**Uranium**—The basic material for nuclear technology. It is a slightly radioactive naturally occurring heavy metal that is more dense than lead. Uranium is 40 times more common than silver.

| **Variance (from safeguards termination limits)**—Removal of requirements for strict material control and accountability as special nuclear material when evaluations demonstrate that the proposed processing method for the material, the controls in place for normal handling of transuranic waste from the processing, and the limited quantity of special nuclear material present at any particular place and time preclude the need to take additional measures to address threats of diversion and theft.

**Vitrification**—For the purpose of this EIS, vitrification means a process that uses glass to encapsulate or agglomerate the plutonium contained in residues or scrub alloy in order to immobilize it.

**Vulnerabilities**—Conditions or weaknesses that may lead to radiation exposure to the public, unnecessary or increased exposure to the workers, or release of radioactive materials to the environment.

**Waste Acceptance Criteria (WAC)**—The requirements specifying the characteristics of waste and waste packaging acceptable to a disposal facility and the documents and processes the generator needs to certify that waste meets applicable requirements.

**Waste classification**—Wastes are classified according to DOE Order 5820.2A, “Radioactive Waste Management,” and include high-level waste, transuranic waste, and low-level waste.

**Waste Isolation Pilot Plant (WIPP)**—A facility in southeastern New Mexico being developed as the disposal site for transuranic and transuranic mixed waste, not yet in operation.

**Waste management**—The planning, coordination, and direction of those functions related to generation, handling, treatment, storage, transportation, and disposal of waste, as well as associated surveillance and maintenance activities.

**Waste minimization**—An action that avoids or reduces the generation of waste by source or toxicity reduction, improves energy usage, or recycles.

**Waste classification**—Wastes are classified according to DOE Order 5820.2A, Radioactive Waste Management, and include high-level waste, transuranic waste, and low-level waste.

- | **Water leach**—A process that uses water to selectively dissolve the soluble portion of salt away from the material (e.g., plutonium) that is contained within it.
- | **WIPP WAC**—Performance based waste acceptance criteria that must be met to allow disposal at the Waste Isolation Pilot Plant (refer to “Waste Acceptance Criteria” and Waste Isolation Pilot Plant,” given above).