Glossary of Terms[1]

(Italicized words are defined in glossary.)

11e(2) byproduct material: Tailings or waste produced by the extraction or concentration of *uranium* or *thorium* from any ore processed primarily for its source material (i.e., uranium or thorium) content. This excludes underground ores depleted by uranium solution extraction operations (in situ leaching) that continue to remain underground. 11e(2) byproduct material is defined by law under Section 11e(2) of the *Atomic Energy Act* as amended by Title II of the *Uranium Mill Tailings Radiation Control Act of 1978.*

Access/Institutional Control: Response strategy consisting of monitoring and limiting public access and/or usage of an area containing *contaminated media* (e.g., physical restrictions, monitoring, administrative restrictions).

Actual quantities: Quantities of waste/media/*spent nuclear fuel* for *fiscal years* that have been completed, where quantities are reported for activities that took place during the reported year.

Additions: A category of *management activities* for waste/media/spent nuclear fuel that includes *new generation*, quantities resulting from *treatment* processes or other management activities (process outputs), and *receipts* from other sites.

Alpha particle: A particle consisting of two protons and two *neutron*s, 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.

Annual quantity: Quantity of waste/media/*spent nuclear fuel* that is reported for a specific *fiscal year* or fiscal year range (see *life cycle* definition). Annual quantities are either *actual quantities* or *projected quantities*.

Atomic Energy Act: The federal law that administers and regulates the production and uses of atomic power. The act was passed in 1946 and amended substantially in 1954 and several times since then.

Atomic Energy Commission *(AEC)*: AEC was created by the *Atomic Energy Act* in 1947 as the civilian agency responsible for the production of nuclear weapons. AEC also researched and regulated atomic energy. Its weapons production and research activities were transferred to the *Energy, Research and Development Administration (ERDA)* in 1975, while its regulatory authority was transferred to the new *Nuclear Regulatory Commission (NRC).*

Buried TRU waste report: Data source for the *Central Internet Database (CID)* that provides information on *buried TRU*. This database was designed to supplement waste and media data in the *EM Corporate Database*, where information on *Buried TRU* at *Department of Energy (DOE)* sites was incomplete.

Calcine: A form of *high-level waste* produced from defense reactor fuel *reprocessing* waste (at the Idaho Chemical Processing Plant) by heating to a temperature below the melting point to bring about loss of moisture and non-radioactive volatile oxides, thus producing a chemically stable granular powder.

Canister: A metal container used for the storage or disposal of heat-producing, solid, *high-level radioactive waste* (usually *HLW-vitrified).*

Capping: A containment action that involves covering a burial ground with protective material such as concrete, asphalt, impermeable soil (clay), and/or crushed rock.

Capsules: Encapsulated *strontium* and *cesium high-level waste* produced from defense reactor fuel *reprocessing* at the Hanford Site.

Central Internet Database (CID): A web-based reporting tool that is being developed by the Department of Energy (DOE) in accordance with the Programmatic *Environmental Impact Statement* (PEIS) Settlement Agreement [Natural Resources Defense Council et al., v. Richardson, Civ No. 97-9369 (SS)]. The CID meets the PEIS Settlement Agreement stipulation that DOE develop and deploy an integrated database containing available information on waste, *facilities*, and *contaminated media* for which DOE has responsibility.

[1] All definitions are taken from U.S. Department of Energy, Office of Environmental Management, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences*. Jan. 1997 (DOE-EM-0319), U.S. Department of Energy, Office of Environmental Management, *Integrated Database Report – 1996: U.S. Spent Nuclear Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-0006, Rev. 13 (December 1997), Central Internet Database glossary: http://cid.em.doe.gov/ (choose glossary option), and the DOE website http://www.energy.gov/.

Cesium (Cs): An element chemically similar to sodium and potassium. The *isotope* cesium-137 is one of the most important *fission products*, with a *half-life* of about 30 years.

Cladding: A corrosion-resistant tube (commonly aluminum, zirconium alloy, or stainless steel) surrounding the reactor fuel pellets which provides protection from a chemically reactive environment and containment of *fission products*.

Cold War: A conflict over ideological differences between the United States and the former Soviet Union lasting from the late 1940s until the early 1990s and carried on by methods short of sustained military action.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) *(*42 USC 9601 et seq): A federal law enacted in 1980 and amended in 1986 that governs the cleanup of *hazardous*, toxic, and *radioactive* substances. The Act and its amendments created a trust fund, commonly known as Superfund, to finance the investigation and cleanup of releases of hazardous substances. The 1986 amendments included provisions that require DOE and other federal agencies to clean up their facilities under Federal Facility agreements with EPA.

Contact-handled transuranic waste: *Transuranic* waste with a surface dose rate of less than 200 millirem per hour.

Contaminant: A general term used to define any *hazardous* constituent or *radionuclide* that exists in a waste *stream*.

Contaminated media: Materials such as soil, sediment, surface water, groundwater, and others (e.g., sludge and rubble/debris that are intermixed with media) that are contaminated at levels requiring cleanup or requiring further assessment to determine whether an *environmental restoration* action is warranted.

Criticality: A term describing the conditions necessary for a sustained nuclear chain reaction.

Curie: A measure of the rate of *radioactive decay*; it is equivalent to the *radioactivity* of one gram of radium or 37 billion disintegrations per second.

Daughter product(s): *Radionuclides* that are produced from other radionuclides when they decay.

Deactivation and Decommissioning (D&D): Often called facility disposition, actions taken to reduce the potential health and safety impacts of contaminated DOE *facilities*, including activities to remove a facility from operation, followed by decontamination, dismantlement, or conversion of a facility to another use.

Decay-corrected value: For *Buried TRU waste*, the number of *curies* representing the estimated activities in the year 2006, the earliest year in which any of these materials could reasonably be scheduled for disposal at the Waste Isolation Pilot Plant (WIPP).

Department of Energy (DOE): The cabinet-level U.S. Government agency responsible for nuclear weapons production and energy research and the cleanup of *hazardous* and *radioactive waste* at its sites. It succeeded the *Energy Research and Development Administration (ERDA)* and other federal government entities in 1977.

Disposal: A particular *management activity* for a waste/media *stream* where the waste is emplaced in a manner that ensures protection of human health and the environment within prescribed limits for the foreseeable future. For waste/media that has undergone disposal, there is no intent of retrieval and deliberate action is required to regain access to the waste.

Disposition: A term used by DOE that refers to the set of *management activities* that a waste/media or *spent nuclear fuel* (SNF) *stream* will undergo throughout its *life cycle* from *generation* until final *disposal*. Also called disposition path. Waste/media management activities can include *treatment*, *disposal*, recycling, and emplacing on site. Spent nuclear fuel management activities can include *stabilization*, moving to dry storage, and SNF treatment.

EM Corporate Database: Data source for the *CID* that provides data on *high-level waste*, *low-level waste*, *mixed low-level waste*, *transuranic waste*, *spent nuclear fuel*, and *facilities*. The *Office of Environmental Management (EM)* collects budget and *life-cycle* planning data through the *EM Corporate Database*.

Energy, Research, and Development Administration (ERDA): The agency created in 1975 to take over the weapons production and research responsibilities of the *Atomic Energy Commission*. ERDA was abolished in 1977, and its functions, along with other federal government functions, were transferred into the cabinet-level *DOE* in 1977.

Enrichment (isotope separation): The process of separating different *isotopes* of the same element. The three elements that have been isotopically enriched in large quantities for use in nuclear weapons production are *uranium*, *lithium*, and hydrogen.

Environmental Protection Agency (EPA): A federal agency, established in 1970, responsible for enforcing environmental laws including the *Resource Conservation and Recovery Act (RCRA)*; the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)*; and the *Toxic Substances Control Act (TSCA)*.

Environmental restoration: Cleanup and restoration of sites contaminated with *radioactive* and *hazardous* substances during past production, accidental releases, or *disposal* activities.

Ex-situ contaminated media: Contaminated environmental media that have been or are planned to be remediated by: 1) excavating or otherwise removing the contaminated media from the ground/ environment; 2) treating when appropriate; and 3) disposing of these media either back in their initial location after treatment or in a specifically designed facility that isolates the media from the environment.

Facility: A facility is defined as buildings, land, other structures and facilities (OSFs), and trailers/ modulars/containers that are owned or leased by *DOE*.

Federal Facility Compliance Act (Public Law 102-386): A 1992 amendment to *RCRA*, this law made federally owned and operated facilities subject to state-imposed fines and penalties for violations of *hazardous waste* requirements and required *DOE* to develop plans for treatment of RCRA-regulated mixed waste.

Fiscal year: A 12-month period that defines a year of activities for budgeting, accounting, and planning purposes. The fiscal year of the U.S. Government and its agencies, including the *DOE*, is from October 1 through September 30. The *CID* reports all data in fiscal years.

Fission (nuclear): The division of a heavy atomic nucleus into two or more *isotopes*, usually accompanied by the emission of *neutrons* and *gamma radiation*.

Fission products: Nuclides produced either by *fission* or by the subsequent decay of the nuclides thus formed.

Fuel assembly: A grouping of nuclear fuel rods that remains integral during the charging and discharging of a reactor core.

Fuel type: The Spent Fuel program categorizes fuel type as: (1) naval SNF, (2) alum based SNF, (3) Hanford Production type SNF, (4) Graphite type SNF, (5) Commercial type SNF, (6a) DOE Test SNF SST clad, (6b) DOE Test SNF Zirc clad, (6c) DOE Test SNF that does fit into 6a or 6b.

FY 2000 Inventory (Storage): The amount of transuranic waste, at the end of FY 2000, awaiting treatment or disposal capability, in such a manner as to not constitute disposal of the waste.

Gamma radiation: High-energy, highly penetrating electromagnetic radiation emitted in the *radioactive decay* of many *radionuclides*. Gamma rays are similar to X-rays.

Gaseous diffusion: A uranium enrichment process based on the difference in rates at which uranium isotopes in the form of gaseous uranium hexafluoride diffuse through a porous barrier. This process is used to enrich uranium in the United States.

(New) Generation: The origination of new waste from various facility operations (including production, *decontamination and decommissioning*, and rework). In this report, the new generation data do not include additional volumes that result from treatment processes or volumes transferred between sites. "Generation" of *ex-situ contaminated media* has a different meaning: It is not the origination of *new* contaminated media, but rather the *excavation* of contaminated media as part of a remedial action. By definition, *in-situ contaminated media* is never generated because it is contaminated media remediated *without excavation.* For in-situ contaminated media, DOE sites report the current year's total estimated volume (entered as an average or a range).

Geologic repository: A facility that has an excavated subsurface system for the permanent disposal of *spent nuclear fuel* and *high-level waste*.

Half-life: For a single *radioactive decay* process, the time required for the activity to decrease to one-half of its initial value by that process.

Hazardous: Causing or significantly contributing to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness, or posing a substantial hazard to human health or the environment.

Hazardous waste: A solid waste, or combination of wastes, that 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 hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Heavy metals: Metallic elements with high atomic weights (e.g., mercury, chromium, cadmium, arsenic, and lead) that can damage living organisms at low concentrations. *Uranium*, *thorium*, and *plutonium* are also heavy metals.

High-level waste (HLW): The highly *radioactive* material resulting from the *reprocessing* of *spent nuclear fuel*, including liquid waste produced directly in reprocessing and any solid material 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. (DOE Order 435.1)

High-level waste-vitrified (HLW-vitrified): High-level waste that has been *stabilized* (chemically converted to a less harmful form) through a *vitrification* process (i.e., by mixing it with molten glass). The glass mixture is poured into cylindrical metal *canisters*, where it hardens.

In-situ: In place.

In-situ containment: Response strategy consisting of the placement of a barrier, seal, or diversion to contain the further spread of contamination (e.g., capping, lateral barrier, interception).

In-situ contaminated media: Contaminated environmental media that have been or are likely to be remediated, without excavation, by using strategies that destroy, isolate, or prevent any further spread of contaminants into the surrounding environment (e.g., in-situ treatment, capping in place, *institutional controls*).

Inventory (storage): The quantity of material that is in storage at a *facility* or site at a given time. This report provides data on sites' end-of-year inventories.

Institutional controls: Long-term actions or restrictions including monitoring, periodic sampling, access controls, and land use restrictions designed to mitigate any risks posed by contamination following remediation. Institutional controls alone may be sufficient to reduce risks posed by low-levels of contamination.

Irradiate: To expose to ionizing *radiation*, usually in a *nuclear reactor*. *Targets* are irradiated to produce *isotopes*.

Isotopes: Different forms of the same chemical element, which are distinguished by having different numbers of *neutrons* (but the same number of protons) in the nucleus of their atoms. A single element may have many isotopes. For example, *uranium* appears in nature in three forms: uranium-234 (142 neutrons), *uranium-235* (143 neutrons), and *uranium-238* (148 neutrons); each uranium isotope has 92 protons.

Life cycle: EM defines life cycle as fiscal year 1997 through 2070. Data are collected for individual years through 2010 and for five-year blocks starting with 2011 (i.e., 2011-1015, 2016 - 2020, etc.).

Lithium (Li): The lightest metal, and the third-lightest element. Lithium has two naturally occurring *isotopes*, lithium-6 and lithium-7. Lithium-6 *targets* are *irradiated* to manufacture *tritium*.

Long-lived isotope: A *radioactive isotope* with a *half-life* greater than approximately 30 years.

Low-level waste (LLW): Low-level radioactive waste (LLW) is *radioactive waste*, including accelerator-produced waste, that is not *high-level radioactive waste*, *spent nuclear fuel*, *transuranic waste*, *by-product material* (as defined in section 11e(2) of the *Atomic Energy Act of 1954*), or naturally occurring radioactive material (DOE Order 435.1)

Macroencapsulation: A treatment process that creates an impermeable block of waste by enveloping it with polyethylene.

Management activity: A specific process that results in the addition, treatment, or disposal of waste, media, or *spent nuclear fuel*. The group of management activities that a particular waste *stream* is undergoing or is planned to undergo is called the stream's *disposition* or disposition path. Please note that DOE does not consider "inventory" a management activity.

Manhattan Project: The U.S. Government project, named for the Manhattan Engineer District that produced the first nuclear weapons during World War II. Started in 1942, the Manhattan Project formally ended in 1946. The Hanford Site, the Oak Ridge Reservation, and the Los Alamos National Laboratory were created for this effort.

Materials in Inventory: Materials that are not currently in use (i.e., have not been used during the last year and are not reasonably expected to be used within the coming year), and have not been designated as waste or been set aside for national defense purposes.

Mixed Low-Level Waste (MLLW): Mixed low-level waste (MLLW) is defined as *low-level waste* determined to contain both a *hazardous* component subject to the *Resource Conservation and Recovery Act (RCRA)*, as amended, and a *radioactive* component subject to the *Atomic Energy Act* (DOE Order 435. 1).

Nanocurie: One one-billionth of a *curie*.

National Environmental Policy Act: 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 decision-making process.

Neutron: A massive, uncharged particle that comprises part of an atomic nucleus. *Uranium* and *plutonium* atoms *fission* when they absorb neutrons. The chain reactions that make nuclear reactors and

weapons work thus depend on neutrons. Man-made elements can be manufactured by bombarding other elements with neutrons in production reactors.

Non-annualized quantity: A quantity of material or waste where the DOE reporting site could not specify the years in which a *management activity* would occur or when quantities would be in inventory.

Non-radioactive hazardous waste: Any solid waste or combination of solid wastes, which do not contain *radionuclides* of any type and, because of its quantity, concentration, or physical, chemical, or infectious characteristics may: 1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or 2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Non-radioactive sanitary waste: Waste that does not contain *radioactive* or *hazardous* constituents sufficient to require special management. Examples of sanitary waste are municipal solid waste, construction/demolition debris, and some waste water. Non-radioactive sanitary waste is reported in the *CID* as routine or non-routine sanitary waste.

Non-routine Resource Conservation and Recovery Act (RCRA) Waste: Solid waste that is either a listed *hazardous waste* (per 40 CFR 261.30 - 261.33) or exhibits the characteristics of a hazardous waste, that has resulted from one-time operations by *environmental restoration* program activities, including primary and secondary waste associated with retrieval and remediation operations, "legacy waste," and waste from decontamination and decommissioning/transition operations.

Non-routine sanitary waste: Waste that does not contain *radioactive* or *hazardous* constituents sufficient to require special management that has resulted from one-time operations by *environmental restoration* program activities, including primary and secondary waste associated with retrieval and remediation operations, "legacy waste," and waste from decontamination and decommissioning/transition operations.

Non-routine Toxic Substance Control Act (TSCA) Waste: Individual chemical wastes (both liquid and solid) regulated by the *Toxic Substances Control Act* that have resulted from one-time operations by *environmental restoration* program activities, including primary and secondary wastes associated with retrieval and remediation operations, "legacy waste," and waste from contamination and decommissioning/ transition operations.

Non-routine state waste: Any waste not specifically regulated under *RCRA*, which may be regulated by State or local authorities (such as used oil) that has resulted from one-time operations by *environmental restoration* program activities, including primary and secondary waste associated with retrieval and remediation operations, "legacy waste," and waste from decontamination and decommissioning/transition operations.

Nuclear reactor: A device that sustains a controlled nuclear *fission* chain reaction.

Nuclear Regulatory Commission: An independent agency of the federal government created by the Energy Reorganization Act of 1974, which abolished the *Atomic Energy Commission (AEC)* and transferred its regulatory function to the NRC. Responsible for ensuring adequate protection of public health and safety, the common defense and security, and the environment in the use of nuclear materials in the United States. Responsible for regulation of commercial nuclear power reactors; non-power research, test, and training reactors; fuel cycle facilities; medical, academic, and industrial uses of nuclear materials; and the transport, storage, and disposal of nuclear materials as waste.

Nuclear Waste Policy Act of 1982: An Act to provide for the development of repositories for the disposal of *high-level waste* and *spent nuclear fuel*, to establish a program of research, development, and demonstration regarding the disposal of high-level waste and spent nuclear fuel, and for other purposes. Section 151(b) discusses the provisions for title and custody of low-level waste and the land on which it is disposed.

Office of Environmental Management (EM): An office of the *DOE* that was created in 1989 to oversee DOE's waste management and environmental cleanup efforts. Originally called the Office of Environmental Restoration and Waste Management, it was renamed in 1993.

Operations/Field office: A management office in the field that carries the organizational responsibility for (1) managing and executing assigned programs, (2) directing contractors who conduct programs, and (3) assuring that environmental, safety, and health protection are integral parts of each program. *DOE* operations offices manage multiple geographic sites.

Physical form: Identifies the physical/chemical characteristics of a *stream* (e.g., soil/gravel, liquids, heterogeneous debris, etc). In this report, waste water and ground/surface water physical form volumes are reported separately from all other physical forms.

Phytoremediation: Phytoremediation is the engineered use of green plants to remove, contain, or render harmless such environmental contaminants as heavy metals, trace elements, organic compounds, and radioactive compounds in soil or water.

Planned disposal: Volume of transuranic waste projected to be disposed of at WIPP between FY 2001 and FY 2034.

Plutonium: A man-made fissile element. Pure plutonium is a silvery metal heavier than lead. Material rich in the plutonium-239 *isotope* is preferred for manufacturing nuclear weapons. The *half-life* of plutonium-239 is 24,000 years.

Polychlorinated biphenyl (PCB): A group of commercially produced organic chemicals used since the 1940s in industrial applications throughout the nuclear weapons complex. PCBs are found in many of the gaskets and large electrical transformers and capacitors in the *gaseous diffusion* plants.

Pollution Prevention Database: Data source for the *CID* that provides information on *non-radioactive hazardous waste* and *sanitary waste*.

Previously-disposed TRU contaminated waste: Previously-disposed TRU contaminated waste are those *transuranic* waste that have been disposed of by shallow land burial generally within the top 30 m (100 ft) of the earth's surface, consistent with guidance of the U.S. Nuclear Regulatory Commission for near-surface disposal of LLW given in 10 CFR 61.

Process outputs: A quantity (volume, mass canisters) of waste/media/*spent nuclear fuel* that is created from treatment processes or other management activities. These quantities are often referred to as "secondary waste." The *CID* distinguishes these amounts from quantities of waste that are newly generated from ongoing program activities.

Production reactor: A reactor whose primary purpose is to produce fissile or other materials or to perform *irradiations* on an industrial scale. Unless otherwise specified, the term usually refers to either a *tritium*- or *plutonium*-production facility used to produce materials for nuclear weapons.

Programmatic Environmental Impact Statement (PEIS): A document that evaluates the environmental impacts of federal programs potentially affecting one or more sites. The document is prepared in accordance with Section 102(2)(c) of the National Environmental Policy Act.

Projected generation: The part of the transuranic waste inventory that has not been generated, but is currently estimated to be generated between FY 2001 and FY 2034.

Projected quantities: Quantities of waste/media/*spent nuclear fuel* that the reporting site provides as estimates for future years based on current management plans.

Radiation: Energy transferred through space or other media in the form of particles or waves. Certain radiation types are capable of breaking up atoms or molecules.

Radioactive: Of, caused by, or exhibiting *radioactivity.*

Radioactive decay: The transition of a nucleus from one energy state to a lower one, usually involving the emission of a photon, electron, *neutron*, or *alpha particle*.

Radioactive waste: Radioactive waste is any garbage, refuse, sludges, and other discarded material, including solid, liquid, semisolid, or contained gaseous material that must be managed for its radioactive content. Radioactive waste includes (1) All high-level waste, transuranic waste, and LLW, including components of mixed waste, for which DOE is responsible; (2) DOE accelerator-produced radioactive waste; and (3) If managed at DOE low-level waste facilities, byproduct materials as defined by section 11e(2) of the Atomic Energy Act of 1954, as amended, or naturally occurring radioactive materials.

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

Radionuclide: A radioactive species of an atom characterized by the constitution of its nucleus.

Radon: A radioactive inert gas that is formed by the decay of radium. Radium is, in turn, a link in the decay chain of *uranium-238*. Radon, which occurs naturally in many minerals, is a chief hazard of uranium mill tailings.

Receipt: The quantity (volume, mass, canisters) of waste/media/*spent nuclear fuel* that a site receives from another site.

Receiving site: The site that will be receiving the waste/*media/spent nuclear fuel* from a *shipping site* in the specified time range.

Remedial action: An action taken according to Section 104 of *CERCLA* to respond to a release of a *hazardous* substance to the environment.

Remote-handled transuranic waste: *Transuranic* waste with a surface dose rate of greater than 200 millirem per hour.

Reprocessing: A process for extracting *uranium*, *plutonium*, and other *radionuclides* from dissolved *spent nuclear fuel* and *irradiated* targets. The *fission products* that are left behind are *high-level waste*. Reprocessing is also known as chemical separation.

Resource Conservation and Recovery Act (RCRA) (Public Law 94-580): A federal law enacted in 1976 to address the *treatment*, storage, and *disposal* of *hazardous waste*.

Research reactor: A reactor whose nuclear *radiation*s are used primarily as a tool for basic or applied research.

Routine Resource Conservation and Recovery Act (RCRA) Waste: Solid waste not specifically excluded from regulation under 40 CFR 261.4, or delisted by petition, that is either a listed *hazardous waste* (40 CFR 261.30-261.33) or exhibits the characteristics of a hazardous waste (40 CFR 261.20-261.24) that is produced by any type of production, analytical, and/or research and development laboratory operations; *treatment*, storage, or *disposal* operations; "work-for-others;" or any other periodic and recurring work that is considered ongoing.

Routine sanitary waste: Waste that does not contain *radioactive* or *hazardous* constituents sufficient to require special management that is produced by any type of production, analytical, and/or research and development laboratory operations; treatment, storage, or disposal operations; "work-for-others;" or any other periodic and recurring work that is considered ongoing.

Routine Toxic Substance Control Act (TSCA) Waste: Individual chemical wastes (both solid and liquid), regulated by the *Toxic Substances Control Act (TSCA)* that are produced by any type of production, analytical, and/or research and development laboratory operations; treatment, storage, or disposal operations; "work-for-others;" or any other periodic and recurring work that is considered ongoing.

Routine state waste: Any other *hazardous waste* not specifically regulated under *RCRA*, which may be regulated by State or local authorities (such as used oil) that is produced by any type of production, analytical, and/or research and development laboratory operations; treatment, storage, or disposal operations; "work-for-others;" or any other periodic and recurring work that is considered ongoing.

Salt cake: A *low-level waste* by-product from the solidification of *high-level waste*.

Shipping site: The site that will be sending waste/media/*SNF* to a *DOE*, commercial, or other non-DOE site in the specified year or range of years.

Site: An area of land (or a series of buildings) where DOE has or is conducting cleanup work.

Source reactor: The *nuclear reactor* where the *spent nuclear fuel* element was *irradiated*.

Source reduction: Any practice which reduces the amount of any *hazardous* substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, *treatment*, or *disposal* and reduces the hazards of public health and the environment associated with the release of such substances, pollutants, or contaminants.

Spent Nuclear Fuel (SNF): Spent Nuclear Fuel (SNF) is fuel that has been permanently withdrawn from a *nuclear reactor* following *irradiation*, but has not been processed to remove its constituent elements. (DOE Order 5660. 1B, Management of Nuclear Materials, May 26, 1994.)

Spent Nuclear Fuel Database: The Spent Nuclear Fuel Database stores information on *spent nuclear fuel* throughout the *DOE* Complex. A subset of information from the Spent Nuclear Fuel Database is incorporated into the *EM Corporate Database*, which is a source system for the *CID*.

Stabilization: Conversion of chemically active or readily dispersible matter into an inert or less harmful form.

Stream: A group of materials, media, or waste having similar origins, generating program, waste type, management requirements (i.e., same disposition path) or barriers to disposition. A waste stream is the smallest quantity of material managed (unit of work) for which data are collected. Streams are stored or dispositioned by only one *EM* project (i.e., PBS) in a given year. A stream is dispositioned when it enters the next transfer, storage or *disposal* system or is transferred to another *site*.

Stream Disposition Data (SDD): Stream-level data that document the planned storage, *treatment*, and *disposal* of *radioactive waste*, *contaminated media*, or *spent nuclear fuel*.

Strontium: An element chemically similar to calcium. *Isotope* strontium-90 has a *half-life* of 28 years, and is one of the most common *fission products*.

Target: Material placed in a *nuclear reactor* to be bombarded with neutrons in order to produce radioactive materials. *Uranium-238* targets are used to make *plutonium*; *lithium* targets are used to make *tritium*.

Thorium: A naturally occurring radioactive element.

Toxic Substances Control Act (TSCA) (Public Law 94-469): A federal law, enacted in 1976 to protect human health and the environment from unreasonable risk caused by exposure to or the manufacturing, distribution, use, or disposal of substances containing toxic chemicals. *PCBs* are regulated under TSCA.

Transuranic waste (TRU): Transuranic Waste (TRU) is radioactive waste containing more than 100 *nanocuries* of *alpha-emitting* transuranic *isotopes* per gram of waste, with *half-lives* greater than 20 years. The term transuranic means those elements with an atomic number greater than that of *uranium* (i.e., atomic number > 92). (DOE Order 435. 1, 1982.)

Treatment: Any method, technique, or process designed to change the physical or chemical character of waste to: render the waste less *hazardous*; make the waste safer to transport, store, or dispose; or reduce the waste's volume.

Tritium: The heaviest *isotope* of the element hydrogen. Tritium is produced in *nuclear reactors* and is three times heavier than ordinary hydrogen. Tritium gas is used to boost the explosive power of most modern nuclear weapons. Tritium has a *half-life* of approximately 12 years.

Unspecified site: Site identified for treatment, shipping, receiving, or disposal of waste/media/*spent nuclear fuel* when the stream treatment, shipping, receiving, or disposal requirements are known, but the treatment, shipping, receiving, or disposal site has not been determined or was not reported by the site.

Unspecified waste type: Contaminated media volumes identified as having been managed or projected to be managed, when the stream management requirements can be known, but the site reported the waste type as "unspecified." In most cases, this occurs when contaminated media volumes include more than one waste type. Once the volume is partitioned, the waste types can be specified.

Uranium: The basic material for nuclear technology. This element is naturally slightly *radioactive* and can be refined to a heavy metal more dense than lead.

Uranium-235: The lighter of the two *isotope*s of uranium; it is the only naturally occurring fissile element. Uranium-235 makes up 0.7 percent of the uranium that is mined from the ground. It has a *half-life* of 704 million years.

Uranium Mill Tailings: Earthen residues that remain after the extraction of uranium from ores. Tailings may also contain other minerals or metals not extracted in the process.

Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (Public Law 95-604): The act that directed the Department of Energy to provide for stabilization and control of the uranium mill tailings from inactive sites is a safe and environmentally sound manner to minimize radiation health hazards to the public. It authorized the Department to undertake remedial actions at 24 designated inactive uranium-processing sites and at an estimated 5,000 *vicinity properties*.

Uranium Mill Tailings Remedial Action (UMTRA) Project: A program to reduce the hazards posed to the public by uranium mill tailings. The program was created by the Department of Energy in response to UMTRCA, which was enacted in 1978. The DOE's Office of Environmental Management is responsible for implementing the UMTRA Project.

Vicinity properties: Locations away from inactive mill sites where uranium mill tailings were used for construction or were transported by wind or water erosion.

Vitrification: A process that stabilizes nuclear waste by mixing it with molten glass. The glass mixture is poured into cylindrical metal *canisters*, where it hardens. Vitrification is a method used to prepare waste, mainly *high-level waste*, for disposal.

Waste type: Standard DOE classification of the waste/media/*spent nuclear fuel* stream. Valid waste types include *high-level waste*, *high-level waste-vitrified*, *low-level waste*, *mixed low-level waste*, *transuranic waste*, *buried transuranic waste*, and other (other includes *11e(2) byproduct* materials as defined as the waste produced by the extraction or concentration of *uranium* or *thorium* from any ore processed primarily for its source material (i.e., uranium or thorium) content.