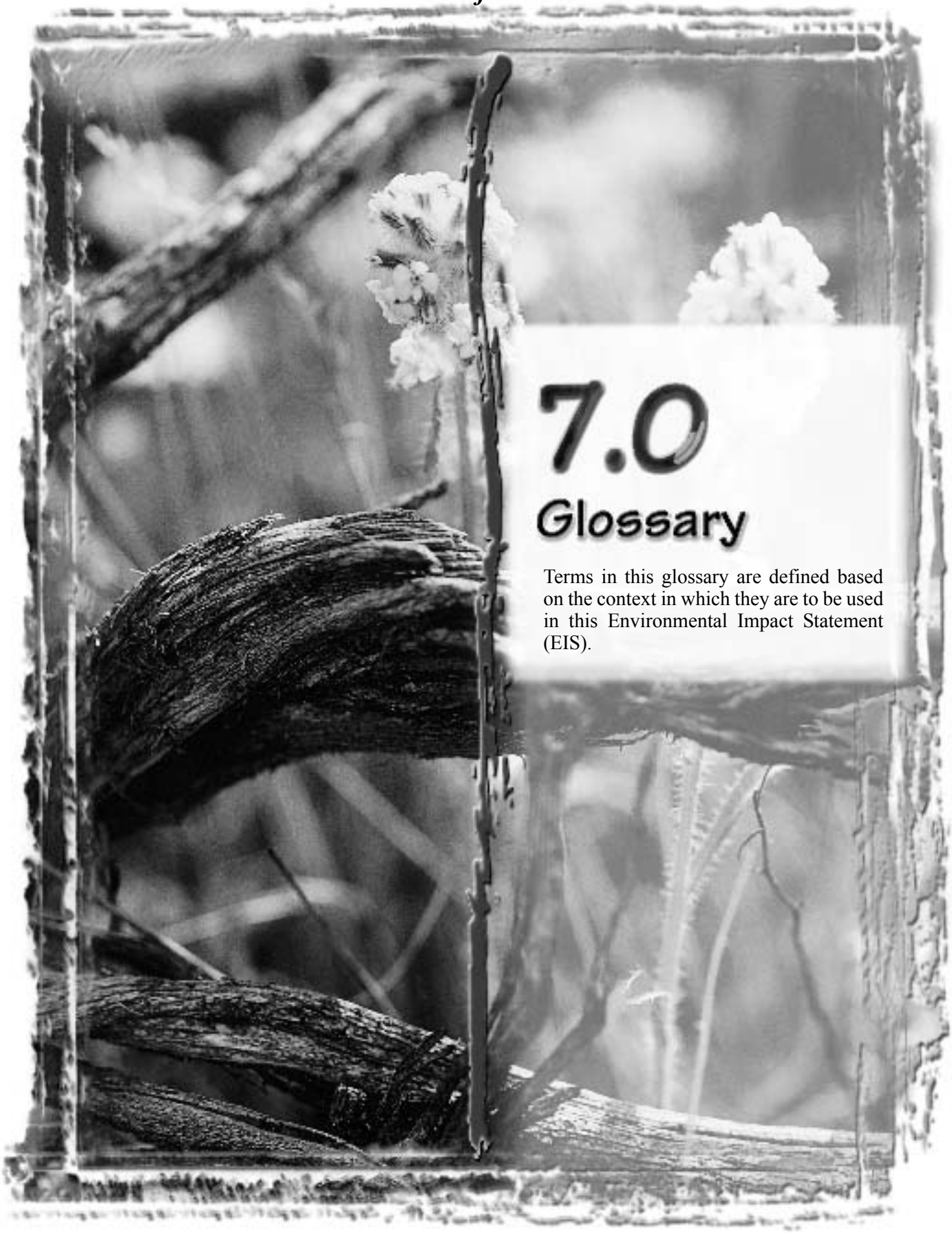
7.0

Glossary



7.0 Glossary

Terms in this glossary are defined based on the context in which they are to be used in this Environmental Impact Statement (EIS).

100-year flood

A flood that occurs, on average, every 100 years (equates to a 1 percent probability of occurring in any given year).

500-year flood

A flood that occurs, on average, every 500 years (equates to a 0.2 percent probability of occurring in any given year).

accident

An unplanned sequence of events that results in undesirable consequences.

actinide

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

Advanced Mixed Waste Treatment Project (AMWTP)

The facility located at the INEEL to treat mixed waste intended for packaging and shipment to the Waste Isolation Pilot Plant for disposal.

airborne release fraction

The fraction of spilled or leaked radioactive material that becomes airborne at the point of origin.

airborne release rate

The airborne release fraction divided by the leak time duration.

alpha-emitter

A radioactive substance that decays by releasing an alpha particle.

alpha-low-level waste

Low-level mixed waste containing, at the time of assay, concentrations of at least 10 but less than 100 nCi/g of waste of alpha-emitting radionuclides with an atomic number greater than 92 and half-lives greater than 20 years. The term "mixed" cannotes waste containing both radioactive and hazardous constituents as defined by the Atomic Energy Act and the Resource Conservation and Recovery Act (RCRA) respectively.

alpha particle

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

alternative

A major strategy or choice to address the EIS "Purpose and Need" statement, as opposed to the engineering options available to achieve the goal of an alternative.

Applicable or Relevant and Appropriate Requirements (ARARs)

Requirements, including cleanup standards, standards of control, and other substantive environmental protection requirements and criteria for hazardous substances as specified under Federal and State law and regulations, that must be met when complying with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

as low as reasonably achievable (ALARA)

A process by which a graded approach is applied to maintaining radiation dose levels to workers and the public and releases of radioactive materials to the environment at a rate that is as far below applicable limits as reasonably achievable.

atomic number

The number of positively charged protons in the nucleus of an atom and the number of electrons on an electrically neutral atom.

aquifer

A body of permeable rock, rock fragments, or soil through which groundwater moves and is capable of yielding significant quantities of water to wells and/or springs.

background radiation

Radiation from cosmic sources; naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material), and global fallout as it exists in the environment from the testing of nuclear explosive devices.

basalt

Dark to medium-dark colored rocks that are volcanic in origin.

baseline

For purposes of this EIS, the conditions expected to exist in 1999, the projected date for the Record of Decision, against which the environmental consequences of the various alternatives are evaluated.

beta-emitter

A radioactive substance that decays by releasing a beta particle.

beta particle

A charged particle emitted from a nucleus during radioactive decay, with a mass equal to 1/1,837 that of a proton. A negatively charged beta particle is identical to an electron. A positively charged beta particle is called a positron.

Beyond-design-basis accident

A beyond-design-basis accident is more severe than a design-basis accident. It generally involves multiple failures of engineered safety systems and would be expected to occur less than once in a million years.

bin set(s)

A series of reinforced concrete vaults, each containing three to seven stainless steel storage bins. The bins store calcined HLW (see Calcined Solids Storage Facilities).

biodiversity

Pertains to the variety of life (e.g., plants, animals, and other organisms) that inhabits a particular area or region.

borosilicate

A form of glass made from silica sand, boric oxide, and soda ash.

bounding

An attribute of an analysis that means it is unlikely that the actual outcome of a scenario will have greater magnitude than the analyzed outcome. The bounding condition is established by selecting analysis assumptions and input parameters that will maximize the analytical result. See also representative.

bounding accident

A postulated accident that defines the range of anticipated accidents and is used to evaluate the consequences of accidents at facilities. The most conservative parameters (e.g., source terms and meteorology) are applied to a conservative accident resulting in a bounding accident analysis.

by-product material

(a) Any radioactive material (except special nuclear material) that comes from, or is made radioactive by, exposure to the radiation incident to the process of producing or utilizing special nuclear material, or (b) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content [Atomic Energy Act 11(e)]. By-product material is exempt from regulation under the Resource Conservation and Recovery Act. However, the exemption applies only to the actual radionuclides dispersed or suspended in the waste substance. Any nonradioactive hazardous waste component of the waste is subject to regulation under the Resource Conservation and Recovery Act.

calcination

The act or process by which a substance is heated to a high temperature that is below the melting or fusing point. Calcination results in moisture removal, organic destruction, and high temperature chemical reactions. The final waste form is a dense powder.

calcine

To heat a substance to a high temperature, but below its melting point, driving off moisture and volatile constituents. When used as a noun, this term is also used to refer to the material produced by this process.

Calcined Solids Storage Facilities (CSSF)

A series of reinforced concrete vaults commonly referred to as bin sets. The vaults contain three to seven stainless steel storage bins for the storage of calcined HLW generated in the New Waste Calcining Facility. Calcined solids from New Waste Calcining Facility are transferred pneumatically to the Calcined Solids Storage Facilities through buried underground transfer lines. This EIS refers to the Calcined Solids Storage Facilities as "bin sets."

canister

A container for high-level waste such as calcined, cemented, or vitrified wastes.

capable fault

In part, a capable fault is one that may have had movement at or near the ground surface at least once within the past 35,000 years, or has had recurring movement within the past 500,000 years. Further definition can be found in 10 CFR 100, Appendix A.

carcinogen

A radionuclide or chemical that has been proven or suspected to be either a promoter or initiator of cancer in humans or animals.

cask

A specially designed container used for shipping, storage, and disposal of radioactive material that affords protection from accidents and provides shielding for radioactive material. The design includes special shielding, handling, and sealing features to provide positive containment and minimize personnel exposure.

cementitious waste

Calcine that is slurried with SBW, recalcined, and then mixed with cement.

ceramic

Materials made from non-metallic minerals such as clays through firing at high temperatures.

certified waste

Waste that has been confirmed to comply with the waste acceptance criteria of the treatment, storage, or disposal facility for which it is intended under an approved waste certification program.

characterization

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

chronic exposure

The absorption, ingestion, or inhalation of a hazardous material by an individual over a long period of time (for example, over a lifetime).

Class A waste

As defined by the Nuclear Regulatory Commission, Class A wastes are radioactive wastes that are usually segregated from other wastes at disposal sites to ensure the stability of the disposal site. Class A waste can be disposed of along with other wastes if the requirements for stability are met. Class A waste usually has lower concentrations of radionuclides than Class C waste.

Class C waste

Radioactive waste that is suitable for near surface disposal but due to its higher radionuclide concentrations must meet more rigorous requirements for waste form stability. Class C waste requires additional protective measures at the disposal facility to protect against inadvertent intrusion.

Code of Federal Regulations (CFR)

A document containing the regulations of Federal departments and agencies.

collective dose

Sum of the effective dose equivalents for individuals composing a defined population. The units for this dose are person-rem.

commercial waste management facility

A facility located off DOE-controlled property that is not managed by DOE to which DOE sends waste for treatment, storage, and/or disposal.

committed dose equivalent

Total dose equivalent accumulated in an organ or tissue in the 50 years following a single intake of radioactive materials into the body.

committed effective dose equivalent

The sum of committed radiological dose equivalents to various tissues in the body, each multiplied by the appropriate weighting factor and expressed in units of rem.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)

A Federal law (also known as "Superfund") that provides a comprehensive framework to deal with past or abandoned hazardous materials. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) provides for liability, compensation, cleanup, and emergency response for haz-ardous substances released into the environment that could endanger public health, welfare, or the environment, as well as the cleanup of inactive hazardous waste disposal sites. CERCLA has jurisdiction over any release or threatened release of any "hazardous substance" to the environment. Under CERCLA, the definition of "hazardous" is much broader than under the Resource Conservation and Recovery Act, and the hazardous substance need not be a waste. If a site meets the CERCLA requirements for designation, it is ranked along with other "Superfund" sites and listed on the National Priorities List. This ranking and listing is the U.S. Environmental Protection Agency's way of determining which sites have the highest priority for cleanup.

condensate

Liquid that results from condensing a gas by cooling below its saturation temperature.

contact-handled

Radioactive materials, usually packaged in some form, that emit radiation levels low enough to permit close and unshielded manipulation by workers.

contaminant

Any chemical or radioactive substance that contaminates (pollutes) air, soil, or water. This term also refers to any hazardous substance that does not occur naturally or that occurs at levels greater than those naturally occurring in the surrounding environment (background).

contamination

The presence of unwanted chemical or radioactive material on the surfaces of structures, areas, objects, or externally or internally to personnel.

credible accident

An accident that has a probability of occurrence greater than or equal to one in a million per year or a frequency of occurrence greater than or equal to one in a million years.

critical

A condition in which uranium, plutonium, or other fissionable materials are capable of sustaining a nuclear fission chain reaction.

criticality

State of being critical. Refers to a self-sustaining nuclear chain reaction in which there is an exact balance between the production of neutrons and the losses of neutrons in the absence of extraneous neutron sources.

curie (Ci)

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 radium. A curie is also a quantity of any radionuclide that decays at a rate of 37 billion disintegrations per second.

decay, radioactive

The decrease in the amount of a radioactive material with the passage of time, due to the spontaneous emission of either alpha or beta particles from the atomic nuclei, often accompanied by gamma radiation (see half-life).

decommissioning

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

decontamination

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

delisting

A regulatory process to exclude a waste produced at a particular facility from the lists in Subpart D of 40 CFR Part 261. To be eligible for an exclusion, a listed waste must not: meet the criteria for which it was listed, exhibit any hazardous waste characteristics, and exhibit any other factors (including additional constituents) that could cause the waste to be a hazardous waste.

design basis accident (DBA)

For nuclear facilities, a postulated abnormal event that is used to establish the performance requirements of structures, systems, and components that are necessary to maintain them in a safe shutdown condition indefinitely or to prevent or mitigate the consequences so that the general public and operating staff are not exposed to radiation in excess of appropriate guideline values.

design basis earthquake

The maximum intensity earthquake that might occur along the fault nearest to a safety-related facility. Safety-related facilities are built to withstand a design basis earthquake.

disposal

Emplacement of high-level radioactive waste, spent nuclear fuel, or other highly radioactive material in a repository with no foreseeable intent of recovery, whether or not such emplacement permits the recovery of such waste.

disposal package

The primary container that holds, and is in contact with, solidified high-level radioactive waste, spent nuclear fuel, or other radioactive materials, and any overpacks that are emplaced at a repository.

disposition

As used in this EIS, disposition is the set of activities performed on INTEC facilities that no longer have a mission so that they can be placed in a condition consistent with INEEL's future land use plans. These activities could include closure, deactivation, decontamination, and decommissioning.

DOE Orders

Internal requirements of the U.S. Department of Energy (DOE) that establish DOE policy and procedures, including those for compliance with applicable laws.

DOE site boundary

A geographic boundary within which public access is controlled and activities are governed by the U.S. Department of Energy (DOE) and its contractors, not by local authorities. A public road crossing a DOE site is considered to be within the DOE site boundary if DOE or the site contractor has the ability to control traffic on the road if necessary (during an emergency, for example).

dosage

The concentration-time profile for exposure to toxicological hazards which is often expressed in terms of amount of exposure per unit of time.

dose (or radiation dose)

A general term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent, as defined elsewhere in this glossary.

dose equivalent

Product of the absorbed dose, the quality factor, and any other modifying factors. The dose equivalent is a quantity for comparing the biological effectiveness of different kinds of radiation on a common scale. The unit of dose equivalent is the rem. A millirem is one one-thousandth of a rem.

effective dose equivalent (EDE)

The sum of the products of the dose equivalent to the organ or tissue and the weighting factors applicable to each of the body organs or tissues that are irradiated. It includes the dose from radiation sources internal and/or external to the body and is expressed in units of rem. The International Commission on Radiation Protection defines concept this as the effective dose.

effluent

A liquid or gaseous waste stream released from a facility.

effluent monitoring

Sampling or measuring specific liquid or gaseous effluent streams for the presence of pollutants.

engineered barriers

Manmade components of a system designed to prevent the release of radionuclides into the environment. These barriers include the radioactive waste form, radioactive waste canisters, and other materials placed over and around such canisters.

enriched uranium

Uranium that has greater amounts of the fissionable isotope uranium-235 than occurs naturally. Naturally occurring uranium is 0.72 percent uranium-235.

environmental monitoring

The process of sampling and analyzing environmental media (e.g., soils) in and around a facility for the purpose of (a) confirming compliance with performance objectives, and (b) detecting any contamination entering the environment to facilitate timely remedial action.

environmental restoration

Cleanup and restoration of sites and decontamination and decommissioning of facilities contaminated with radioactive and/or hazardous substances in the past as a result of production activities, accidental releases, or disposal activities.

Environmental Restoration Program

A DOE subprogram concerned with all aspects of assessment and cleanup of both contaminated facilities that are in use and of sites that are no longer a part of active operations. Remedial actions, most often concerned with contaminated soil and groundwater, and decontamination and decommissioning are responsibilities of this program.

evaporator

A facility that mechanically reduces the water contents in tank waste to concentrate the waste and reduce storage space needs.

exposure pathways

The course a chemical or physical agent takes from the source to the exposed organism. An exposure pathway describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a release site. Each exposure pathway includes a source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source, a transport/exposure medium such as air or water is also included.

external accident

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

facility worker

Any worker whose day-to-day activities are controlled by safety management programs and a common emergency response plan associated with a facility or facility area. This definition includes any individual within a facility/facility area or its 0.4-mile exclusion zone. This definition can also include those transient individuals or small populations outside the exclusion zone but inside the radius defined by the maximally exposed co-located worker if reasonable efforts to account for such people have been made in the facility or facility area emergency plan.

Feasibility Study

A step in the environmental restoration process specified by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The objectives are to identify possible alternatives for remediation and describe a remedial action that satisfies applicable or relevant appropriate requirements (ARARs) for mitigating confirmed environmental contamination. The Feasibility Study presents a series of specific engineering or construction alternatives for cleaning up a site; for each alternative presented, there will be a detailed analysis of the costs, effects, engineering feasibility, and environmental impacts. The Feasibility Study is based on information provided in the remedial investigation (RI). Successful completion of an Feasibility Study should result in a decision (Record of Decision) selecting a remedial action alternative and the subsequent development of a remedial design for implementation of the selected remedial action.

Federal Facility Compliance Act (FFCA)

Federal law signed in October 1992 amending the Resource Conservation and Recovery Act. The objective of the FFCA is to bring all Federal facilities into compliance with applicable Federal and State hazardous waste laws, to waive Federal sovereign immunity under those laws, and to allow the imposition of fines and penalties. The law also requires the U.S. Department of Energy to submit an inventory of all its mixed waste and to develop a treatment plan for mixed wastes.

Federal Facility Agreement and Consent Order (FFA/CO)

A binding agreement, negotiated pursuant to Section 120 of CERCLA, signed by DOE, the Environmental Protection Agency Region 10, and the State of Idaho, to coordinate cleanup activities at the INEEL. The FFA/CO and its Action Plan outline the remedial action process that will encompass all investigation of hazardous substance release sites. The FFA/CO superseded the Consent Order and Compliance Agreement.

fines

Fraction of calcined material that consists of small, powder-like particles (less than ½ millimeter in size) that are readily dispersed in air.

fissile material

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

fission

The splitting of a heavy 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 (fission fragments) formed by the fission of heavy elements, plus the nuclides formed by the fission fragments' radioactive decay.

fissionable material

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

frit

Finely ground glass

fractionator

A device, also known as a distillation column, that separates a feed stream into two or more fractions by contacting the vapor and liquid phases of the incoming mixture. The lighter (lower boiling) components of the feed stream are concentrated in the vapor phase (known as overheads), and the heavier (higher boiling) components are concentrated in the liquid phase (known as bottoms).

gamma-emitter

A radioactive substance that decays by releasing gamma radiation.

gamma ray (gamma radiation)

High-energy, short wavelength electromagnetic radiation (a packet of energy) emitted from the nucleus of an atom. Gamma radiation frequently accompanies alpha and beta emissions and always accompanies fission. Gamma rays are very penetrating and are best stopped or shielded against by dense materials, such as lead or uranium. Gamma rays are similar to x-rays.

geologic repository

A deep (on the order of 600 meter [1,928 feet] or more) underground mined array of tunnels used for disposal of radioactive waste.

greater confinement facility

A disposal strategy that consists of placing the waste at the bottom of deep, large diameter, boreholes and covering it with soil, clay, gravel, sand, or concrete. This strategy was first developed in the early 1980s as a method for disposing of low-level wastes that were not suitable for near-surface disposal by shallow land burial (i.e., within 30 meters below the earth surface). The minimum greater confinement disposal depth is equal to or greater than 30 meters. This method could potentially be used for high-level waste disposal pending assessments to confirm acceptable performance.

greater-than-Class-C waste

Low-level radioactive waste that exceeds U.S. Nuclear Regulatory Commission concentration limits for Class C low-level waste, as specified in 10 CFR Part 61. DOE is responsible for disposing of Greater-Than-Class-C wastes from U.S. Department of Energy non-defense programs.

gross alpha

The total alpha radiation from all sources (e.g., radioactive materials) reported in one measurement.

gross beta

The total beta radiation from all sources (e.g., radioactive materials) reported in one measurement.

groundwater

Water occurring beneath the earth's surface in the intervals between soil grains, in fractures, and in porous formations.

grout

A fluid mixture of cement-like materials and liquid waste that sets up as a solid mass and is used for waste fixation, immobilization, and stabilization purposes.

habitat

The sum of environmental conditions in an area naturally or normally occupied (or used) by a plant or animal.

half-life

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

hazard index

A measure of the noncarcinogenic health effects of human exposure to chemicals. Health effects are assumed to be additive for exposure to multiple chemicals. A hazard index of greater than 1.0 is indicative of potential adverse health effects. Health effects could be minor temporary effects or fatal, depending on the chemical and amount of exposure.

hazardous chemical

A term defined under the Occupational Safety and Health Act and the Emergency Planning and Community Right-to-Know Act as any chemical that is a physical hazard or a health hazard.

hazardous material

A substance or material, including a hazardous substance, which 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 or unpermitted fashion becomes subject to the reporting and possible response provisions of the Clean Water Act and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

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, or disposed of, or otherwise managed. Source material, special nuclear material, and by-product material, as defined by the Atomic Energy Act, are specifically excluded from the definition of solid waste.

heavy metals

Metallic elements with high atomic weights (for example, mercury, chromium, cadmium, arsenic, and lead) that can harm organisms at low concentrations and that tend to accumulate in the food chain.

HEPA

High-efficiency particulate air

high- activity waste (HAW)

Considered to be the mixed radioactive waste generated by separating as much of the radioactivity as is practicable from the HLW stream. The resultant stream is expected to be greater than 10 CFR 61 Class C concentrations and, therefore, is required to be disposed of in a geological repository in a manner that meets the performance objectives of the Nuclear Waste Policy Act.

high-efficiency particulate air (HEPA) filter

A filter with an efficiency of at least 99.97 percent used to separate particles from air exhaust streams prior to releasing that air into the atmosphere.

high-level waste

High-level waste is the highly radioactive waste material resulting from the processing of spent nuclear fuel, including liquid waste produced directly in processing 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 isolation.

hot isostatic press (HIP)

A process that stabilizes and reduces the volume of high-level waste where calcined waste is retrieved, mixed with suitable additives, canned, and then heated and pressed in the container to form a ceramic-like material. The resulting waste form is expected to be equivalent to vitrified waste and potentially acceptable as a waste form for disposal in a geologic repository.

hydraulic conductivity

Capacity of a porous media to transport water.

hydrogeology

The study of groundwater and how it relates to geologic processes. Synonymous with "geohydrology."

hydrology

The study of water, including groundwater, surface water, and rainfall.

Idaho Settlement Agreement

A court-ordered agreement among the State of Idaho, DOE, and the Navy. Under the Settlement Agreement, DOE must meet certain conditions relating to the management of high-level waste at the INEEL.

immobilization

A process (e.g., solidification or vitrification) used to stabilize waste. Immobilizing the waste inhibits the release of waste to the environment.

inadvertent intrusion

The inadvertent disturbance of a disposal facility or its immediate environment by a burrowing animal or human intruder that could result in loss of containment of the waste or exposure of personnel. Inadvertent intrusion is a significant consideration in the design requirements or waste acceptance criteria of a waste disposal facility and development of its waste acceptance criteria.

incidental waste or waste incidental to reprocessing

Wastes resulting from processing spent nuclear fuel that is determined to be incidental to processing and thus not high-level waste. This waste must be managed under DOE's regulatory authority in accordance with the requirements for transuranic waste or low-level waste, as appropriate. When determining whether spent nuclear fuel reprocessing plant wastes shall be managed as another waste type or as high-level waste, either the citation or evaluation process described below shall be used:

1. Citation. Waste incidental to reprocessing by citation includes spent nuclear fuel reprocessing plant wastes that meet the description included in the Notice of Proposed Rulemaking (34 FR 8712) for proposed Appendix D, 10 CFR Part 50, Paragraphs 6 and 7. These radioactive wastes are the result of reprocessing plant operations, such as, but not limited to: contaminated job wastes including laboratory items such as clothing, tools, and equipment.

2. Evaluation. Determinations that any waste is incidental to reprocessing by the evaluation process shall be developed under good record-keeping practices, with an adequate quality assurance process, and shall be documented to support the determinations.

incineration

The efficient burning of solid and liquid wastes to destroy organic constituents and reduce the volume of the waste. Incinerators are designed to burn with an extremely high efficiency. The greater the burning efficiency, the cleaner the air emission. Incineration of radioactive materials does not destroy the radionuclides but does significantly reduce the volume of these wastes. High-efficiency particulate air filters are used to prevent radionuclides and heavy metals from going out of the stack and into the atmosphere.

in situ

A Latin term meaning "in place."

institutional control

The period of time when a site is under active governmental control. For the purposes of this analysis, the time period of 2000 through 2095 is assumed.

interim action

An action that may be undertaken while work on a required program Environmental Impact Statement (EIS) is in progress and the action is not covered by an existing program statement. An interim action may not be undertaken unless such action: (a) is justified independently of the program; (b) is itself accompanied by an adequate EIS or has undergone other National Environmental Policy Act review; and (c) will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

interim storage

Temporary storage of waste until an ultimate disposal plan is approved and implemented.

internal accidents

Accidents that are initiated by man-made energy sources associated with the operation of a given facility. Examples include process explosions, fires, spills, criticalities.

involved worker

See facility worker.

irreversible and irretrievable resource commitments

Resources that would be irreversibly and irretrievably committed as a result of construction and operation of high-level waste management facilities would include those that are consumed or expended (such as electricity and fossil fuels), those that cannot be recycled (such as concrete and aggregate), and those that cannot be fully restored (such as parcels of land that cannot be returned to a pristine state).

isotope

An isotope of a chemical element has the same atomic number (i.e., number of protons) but a different atomic mass (i.e., number of neutrons plus proton) than other isotopes of the same element. Thus, carbon-12, carbon-13, and carbon-14 are isotopes of the element carbon. Isotopes may be radioactive.

land disposal restrictions

A Resource Conservation and Recovery Act (RCRA) program that restricts land disposal of RCRA hazardous and RCRA mixed wastes and requires treatment to promulgated treatment standards. Land Disposal Restrictions identify hazardous wastes that are restricted from land disposal and define those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

landfill

A solid waste facility or part of a facility for the disposal of solid wastes in or on the land. This includes a sanitary landfill, balefill, landspreading disposal facility, or a hazardous waste, problem waste, limited purpose, inert, or demolition waste landfill.

latent cancer fatality (LCF)

A fatality resulting from cancer occurring some time after an exposure to a known or suspected carcinogenic substance or chemical.

listed waste

Under the Resource Conservation and Recovery Act, waste listed in 40 CFR 261, Subpart D, as hazardous. Listed hazardous wastes include wastes from specific sources, nonspecific sources, and discarded commercial chemical products. These wastes have not been subjected to the toxicity characterization leaching procedure because the dangers they present are considered self-evident.

long-term storage

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

low-activity waste (LAW)

The mixed radioactive waste that remains after separating as much of the radioactive high-activity waste (HAW) as is practicable from the HLW stream. The resultant stream is expected to meet the 10 CFR 61 Class C or lower limits and therefore, can be disposed of in a near surface facility in a manner that meets the performance objectives of 10 CFR 61. Thus it meets the evaluation process for waste incidental to reprocessing (INEEL definition).

low-level waste (LLW)

Waste that contains radioactivity and is not classified as high-level waste, transuranic waste, or spent nuclear fuel, or by-product tailings containing uranium or thorium from processed ore (as defined in Section II e(2) of the Atomic Energy Act).

low-level mixed waste (LLMW)

Waste that contains both hazardous waste under the Resource Conservation and Recovery Act and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954 (42 USC 2011, et seq.).

maximally exposed individual (MEI)

A hypothetical individual defined to allow dose or dosage comparison with numerical criteria for the public. This individual is located at the point of maximum exposure on the DOE site boundary nearest to the facility in question. Sometimes called maximally exposed offsite individual.

maximum contaminant level (MCL)

Under the Safe Drinking Water Act, the maximum permissible concentrations of specific constituents in drinking water delivered to any user of a public water system that serves 15 or more connections and 25 or more people. The standards set as maximum contaminant levels take into account the feasibility and cost of attaining the standard.

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. With respect to high-level waste, DOE has historically assumed a canister of defense program high-level waste contains 0.5 MTHM.

millirem

One thousandth of a rem (see rem).

mitigation

Actions taken to avoid, minimize, rectify, or compensate potential adverse environmental impacts.

mixed waste

Waste that contains both hazardous wastes under the Resource Conservation and Recovery Act and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954.

mixing depth

The height to which pollutants can freely disperse, above which inversion conditions exist.

monitored retrievable storage

A concept for interim storage of waste or spent fuel. The waste would be continuously monitored and would be stored in such a way that it could be retrieved at a later date.

monolithic tanks

Those INTEC tanks whose secondary containment vaults were constructed of cast-in-place reinforced concrete. This design includes the two octagonal vaults for tanks WM-180 and WM-181 and a single square vault housing the tanks WM-187, WM-188, WM-189, and WM-190, with partitions separating the tanks. These tank vault designs are expected to meet seismic design criteria.

nanocurie

One billionth of a curie (see curie).

National Priorities List (NPL)

A formal listing of the nation's most hazardous waste sites, as established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that have been identified for remediation.

natural phenomena accidents

Accidents that are initiated by phenomena such as earthquakes, tornadoes, floods, and so forth.

near-surface disposal

Disposal in the uppermost portion of the earth, to a depth of approximately 30 meters. Near-surface disposal includes disposal in engineered facilities that may be built totally or partially above-grade provided that such facilities have protective earthen covers. A near-surface disposal facility is not considered a geologic repository.

newly generated liquid waste

Newly generated liquid waste refers to liquid waste from a variety of sources that has been evaporated and added to the liquid mixed HLW and mixed transuranic waste/sodium-bearing waste in the below-grade tanks at the INTEC. Sources include leachates from treating contaminated high-efficiency particulate air filters, decontamination liquids from INTEC operations that are not associated with HLW management activities, and liquid wastes from other Idaho National Engineering and Environmental Laboratory facilities. Newly generated liquid waste is used in this EIS because INTEC has historically used this term to refer to liquid waste streams (past and future) that were not part of spent fuel reprocessing.

nitrogen oxides (NO_x)

Gases formed in great part from atmospheric nitrogen and oxygen when combustion takes place under conditions of high temperature and high pressure; considered a major air pollutant. Two major nitrogen oxides, nitric oxide (NO) and nitrogen dioxide (NO_2) are important airborne contaminants. In the presence of sunlight, nitric oxide combines with atmospheric oxygen to produce nitrogen dioxide, which in high enough concentrations can cause lung damage.

noncertifiable waste

Waste that does not meet the waste acceptance criteria for the intended treatment, storage, or disposal facility or transportation requirements; or waste that may be too difficult to characterize adequately to prove that it meets the applicable criteria.

noninvolved workers

Workers that are located 640 meters from INTEC but are not involved in the activities described in Chapter 3 of this EIS.

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 criticality

A self-sustaining nuclear chain reaction.

nuclear fuel

Materials that are fissionable and can be used in nuclear reactors to make energy.

nuclide

A general term referring to all known isotopes, both stable (279) and unstable (about 5,000), of the chemical elements.

off-gas

Gas evolved or generated during a treatment process. Incineration or vitrification is an example of thermal treatment processes that may produce off-gas.

off-gas treatment

Generic name for equipment designed to clean up gases being vented from processes. May consist of absorbers, sand beds, gas flares, and high-efficiency particulate air (HEPA) filters.

off-link doses

Doses to members of the public within 800 meters of a road or railway.

offsite population

The collective population living within a 50-mile radius of a nuclear facility.

on-link doses

Doses to members of the public sharing a road or railway.

operable unit

A discrete portion of a hazardous waste site (referred to as a "Waste Area Group" at INEEL) consisting of one or many release sites considered together for assessment and cleanup activities. The primary criteria for placement of release sites into an operable unit include geographic proximity, similarity of waste characteristics and site types, and the possibilities for economy of scale.

overpack

A thick steel secondary canister designed to dissipate heat and to shield and contain radioactive waste. In general, any container into which another container is placed.

particulate

Pertains to minute, separate particles. An example of a dry particulate is dust.

perched water

A discontinuous saturated water body above the water table with unsaturated conditions existing both above and below. Perched water at the INEEL occurs in a variety of situations. The upper most perched water at INTEC historically has been found at the top of the basalt (bottom of alluvial sediments). This type occurs near the Big Lost River. Other perched water bodies occur below the alluvium/basalt interface and above the Snake River Plain Aquifer. The perched water bodies are formed as a result of infiltrating water encountering a significant reduction in the permeability of the subsurface materials. This reduced permeability is generally a result of sedimentary materials (sedimentary interbeds) deposited between basalt flows but has been observed at the top of basalt flows without the presence of sedimentary materials.

perched water table

An underground water body that occupies a basin in impermeable material (such as clay) and is located in a position higher than the water table.

perennial stream

A watercourse that flows year-round.

permanent disposal

For high-level waste, the term means emplacement in a repository for high-level radioactive waste, spent nuclear fuel, or other highly radioactive material with no foreseeable intent of recovery, whether or not such emplacement permits the recovery of such waste.

permeability

The degree of ease with which water can pass through a rock or soil.

person-rem

A unit used to measure the radiation exposure to an entire group and to compare the effects of different amounts of radiation on groups of people. It is obtained by multiplying the average dose equivalent (measured in rem) to a given organ or tissue by the number of persons in the population of interest.

pH

A measure of the relative acidity or alkalinity of a solution. A neutral solution has a pH of 7, acids have a pH of less than 7, and bases have a pH of greater than 7.

picocurie

One trillionth of a curie (see curie).

pillar and panel tanks

Those INTEC tanks whose secondary containment vaults were constructed of prefabricated reinforced concrete sections. This design includes the five vaults housing tanks WM-182, WM-183, WM-184, WM-185, and WM-186. This vault design is not expected to meet seismic design criteria. Consequently, these tanks will be removed from service prior to the monolithic tanks.

playa

A shallow basin in a desert plain in which water gathers and then evaporates.

plume

The distribution of contaminants a distance away from a point source in a medium like groundwater or air. It is a defined area of contamination.

point estimate risk

The product of the probability (likelihood) of an accident occurring and the consequences of the accident (latent cancer fatalities).

population

For risk assessment purposes, population consists of the total potential members of the public or workforce who could be exposed to a possible radiation or chemical dose from an exposure to radionuclides or carcinogenic chemicals.

population dose

Sum of radiation doses for individuals composing a defined population (see collective dose, effective dose equivalent).

Portland cement

A hydraulic cement made by finely pulverizing the clinker produced by calcining a mixture of clay and limestone or similar materials.

prefilter

A filter that provides first-stage air filtration to remove larger particulates and prolong the efficient use of a high-efficiency particulate air (HEPA) filter.

privatization

Use of the commercial sector for services usually performed by the government or its contractors.

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 condensate

Liquid that is boiled off from an aqueous solution, then condensed back into a liquid.

process knowledge

The set of information that is used by trained and qualified individuals who are cognizant of the origin, use, and location of waste-generating materials and processes in sufficient detail so as to certify the identity of the waste.

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

public

Anyone outside the DOE site boundary. With respect to accidents analyzed in this EIS, anyone outside the DOE site boundary at the time of an accident.

public comment

A written or verbal remark or statement of fact or opinion made in response to a position proposed by a government agency.

rad

A unit of radiation absorbed dose. One rad is equal to an absorbed dose of 100 ergs/gram.

radiation (ionizing radiation)

Alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation, as it is used here, does not include nonionizing radiation such as radio- or microwaves, or visible, infrared, or ultraviolet light.

radiation worker

A worker who is occupationally exposed to ionizing radiation and receives specialized training and radiation monitoring devices to work in such circumstances.

radioactive waste

Waste that is managed for its radioactive content.

radioactivity

The property or characteristic of material to spontaneously disintegrate with the emission of energy in the form of radiation. The unit of radioactivity is the curie (or becquerel).

radioisotope

An unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation. Approximately 5,000 natural and artificial radioisotopes have been identified.

radiological survey

The evaluation of the radiation hazard accompanying the production, use, or existence of radioactive materials under a specific set of conditions. Such evaluation customarily includes a physical survey of the disposition of materials and equipment, measurements or estimates of the levels of radiation that may be involved, and a sufficient knowledge of processes affecting these materials to predict hazards resulting from unexpected or possible changes in materials or equipment.

radionuclide

A distinct nuclear species; the nuclear entity analogous to an element in chemistry that has distinct nuclear properties (e.g., cesium-137, uranium-238, technetium-99).

raffinate

That portion of a treated liquid mixture remaining after chemically removing selected components; in high-level waste, first cycle raffinate is the highly radioactive liquid remaining after dissolved spent nuclear fuel is processed through a single solvent extraction operation to remove recoverable uranium or plutonium.

RCRA

See Resource Conservation and Recovery Act.

RCRA interim status facility

Hazardous waste management facilities (that is, treatment, storage, or disposal facilities) subject to Resource Conservation and Recovery Act requirements that were in existence on the effective date of regulations are considered to have been issued a permit on an interim basis as long as they have met notification and permit application submission requirements. Such facilities are required to meet interim status standards until they have been issued a final permit or until their interim status is withdrawn.

RCRA storage

A facility used to store Resource Conservation and Recovery Act (RCRA) hazardous waste for greater than 90 days. To be in compliance with the regulatory requirements of RCRA, the facility must meet both documentation requirements (for example, contingency and waste analysis plans) and physical requirements (for example, specific aisle widths and separation of incompatible wastes).

recharge

The process of restoring or replenishing water to an aquifer through percolation downward through the soil. Recharge can be natural (e.g., precipitation) or artificial (intentional discharge of water to the ground).

Record of Decision (ROD)

A public document that records the final decision(s) concerning a proposed agency action. The Record of Decision is based in whole or in part on information and technical analysis generated either during the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process or the National Environmental Policy Act process, both of which take into consideration public comments and community concerns.

regulated substances

A general term used to refer to materials other than radionuclides that are regulated by Federal, state, (or possibly local) requirements.

rem

A unit of radiation dose that reflects the ability of different types of radiation to damage human tissues and the susceptibility of different tissues to the damage. Rem is a measure of effective dose equivalent.

remedial investigation

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) process of determining the nature and extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The remedial investigation provides the site-specific information for the feasibility study that follows.

remediation

Process of cleaning up, treating, or otherwise improving conditions at a site where a hazardous substance release has occurred.

remote-handled

This term refers to radioactive waste that must be handled at a distance to protect workers from unnecessary exposure.

remote handling

The handling of wastes from a distance to protect human operators from unnecessary exposure.

repository

For high-level waste, any system licensed by the U.S. Nuclear Regulatory Commission that is intended to be used for, or may be used for, the deep geologic disposal of high-level radioactive waste and spent nuclear fuel, whether or not the system is designed to permit the recovery, for a limited period during initial operation, of any materials placed in the system. It includes both surface and subsurface areas at which high-level radioactive waste and spent nuclear fuel handling activities are conducted as defined in the Nuclear Waste Policy Act [42 U.S.C. 10101]. For transuranic waste, the repository is defined as the Waste Isolation Pilot Plant Facility.

representative

An attribute of an analysis that means the analytical result can represent the results of hypothetical analyses of other similar scenarios. The hypothetical, unanalyzed scenarios are expected to have outcomes similar enough to let the representative analysis stand for the unanalyzed scenarios. The representative analysis does not necessarily produce an analysis that bounds the analyses for all similar scenarios. See also bounding.

Resource Conservation and Recovery Act (RCRA)

A Federal law addressing the management of waste. Subtitle C of the law addresses hazardous waste under which a waste must either be "listed" on one of the U.S. Environmental Protection Agency's (EPA's) hazardous waste lists or meet one of EPA's four hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity, as measured using the toxicity characterization leaching procedure. Cradle-to-grave management of wastes classified as RCRA hazardous wastes must meet stringent guidelines for environmental protection as required by the law. These guidelines include regulation of transport, treatment, storage, and disposal of RCRA defined hazardous waste. Subtitle D of the law addresses the management of nonhazardous, nonradioactive, solid waste such as municipal wastes.

respirable fraction

That fraction of airborne droplets or particulate matter (aerosol) with individual particle aerodynamic equivalent diameter of 10 micrometers or less and can be inhaled into the human respiratory system. Non-condensable gases and vapors have a respirable fraction equal to 1.00.

retrieval

The process of recovering wastes that have been stored or disposed of onsite so they may be appropriately characterized, treated, and disposed of.

risk

Quantitative expression that considers both the probability that an event causes harm and the consequences of that event.

road ready

Waste material that has been treated and placed in containers, ready for shipment to a geologic or suitable repository. The containers must be placed into transportation casks prior to shipment.

safety analysis report

A report that summarizes the hazards associated with the operation of a particular facility and defines minimum safety requirements.

sanitary waste

Liquid or solid wastes that are generated as a result of routine operations of a facility and are not considered hazardous or radioactive.

scaling factor

A multiplier that allows the inference of one radionuclide concentration from another that is more easily measured.

scope

The range of actions, alternatives, and impacts to be considered in a document prepared pursuant to the National Environmental Policy Act.

segregation

The process of separating (or keeping separate) individual waste types and/or forms in order to facilitate their cost-effective treatment and storage or disposal.

seismicity

The phenomenon of earth movements; seismic activity. Seismicity is related to the location, size, and rate of occurrence of earthquakes.

shielding

Bulkheads, walls, or other constructions used to absorb or deflect/scatter radiation to protect personnel or equipment.

sodium-bearing waste (SBW)

SBW is ***a*** liquid ***mixed radioactive*** waste ***produced from the second and third cycles of spent nuclear fuel reprocessing and waste calcination, liquid wastes from INTEC closure activities stored in the Tank Farm, solids in the bottom of the tanks, and trace contamination from first cycle reprocessing extraction waste.*** SBW contains large quantities of sodium and potassium nitrates. Typically, SBW is processed through an evaporator to reduce the volume, then stored in the ***Tank Farm***. It has historically been managed within the HLW program because of the existing plant configuration and some physical and chemical properties that are similar to HLW. ***Radionuclide concentrations for liquid SBW are generally 10 to 1,000 times less than for liquid HLW.*** SBW contains hazardous and radioactive ***components*** and is a mixed waste. ***DOE assumes that the SBW*** is mixed transuranic waste. This EIS refers to SBW as mixed transuranic waste/SBW.

sole-source aquifer

A designation granted by the U.S. Environmental Protection Agency when groundwater from a specific aquifer supplies at least 50 percent of the drinking water for the area overlying the aquifer. Sole-source aquifers have no alternative source or combination of sources that could physically, legally, and economically supply all those who obtain their drinking water from the aquifer. Sole-source aquifers are protected from federally financially assisted activities determined to be potentially unhealthy for the aquifer.

solidification

Changing a substance from liquid to solid by cooling it below its melting temperature or by adding solid-forming materials such as Portland cement. This term also can refer to removing waste from wastewater.

solid waste

Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. It does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges, which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended [Public Law 94-580, 1004(27) (Resource Conservation and Recovery Act)].

solvent

Substance (usually liquid) capable of dissolving one or more other substances.

source material

(a) Uranium, thorium, or any other material that is determined by the U.S. Nuclear Regulatory Commission pursuant to the provisions of the Atomic Energy Act of 1954, Section 61, to be source material; or (b) ores containing one or more of the foregoing materials, in such concentration as the U.S. Nuclear Regulatory Commission may by regulation determine from time-to-time [Atomic Energy Act 11(z)]. Source material is exempt from regulation under to Resource Conservation and Recovery Act.

source term (Q)

The quantity of radioactive material released by an accident or operation that causes exposure after transmission or deposition. Specifically, it is that fraction of respirable material at risk that is released to the atmosphere from a specific location. The source term defines the initial condition for subsequent dispersion and consequence evaluations. Q = material at risk × damage ratio × airborne release fraction × respirable fraction × leak path factor. The units of Q are quantity at risk averaged over the specified time duration.

special nuclear material

(a) Plutonium, or uranium enriched in the isotope 233 or in the isotope 235, and any other material that the U.S. Nuclear Regulatory Commission, pursuant to the provisions of the Atomic Energy Act of 1954, Section 51, determines to be special nuclear material; or (b) any material artificially enriched by any of the foregoing, but does not include source material. Special nuclear material is exempt from regulation under the Resource Conservation and Recovery Act (RCRA).

spent nuclear fuel

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

stabilization

Treatment of waste to protect the environment from contamination. This includes rendering a waste immobile or safe for handling and disposal.

stakeholder

Any person or organization interested in or affected by DOE activities. Stakeholders may include representatives from Federal agencies, State agencies, Congress, Native American Tribes, unions, educational groups, business and industry, environmental groups, and members of the general public.

storage

Retention of high-level radioactive waste, spent nuclear fuel, transuranic, or hazardous wastes with the intent to recover such waste or fuel for subsequent use, processing, or disposal.

Tank Farm

An installation of multiple adjacent tanks at INTEC interconnected for storage of liquid radioactive waste.

tank heel

A tank heel is the amount of liquid remaining in each tank after lowering to the greatest extent possible by use of the existing transfer equipment, such as ejectors.

tank residual

The tank residual is the amount of radioactive waste remaining in each tank, the removal of which is not considered to be technically and economically practical. This could be the tank heel or the amount of radioactive waste remaining after additional removal using other methods than the existing transfer equipment.

thermal treatment

The treatment of hazardous waste in a device that uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge.

total effective dose equivalent

The sum of the external dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

transmissivity

The rate at which water of a prevailing density and viscosity is transmitted through a unit width of an aquifer under a unit hydraulic gradient. It is a function of properties of the liquid, the porous media, and the density of the porous media.

transuranic waste

Waste containing more than 100 nanocuries per gram of waste of alpha-emitting transuranic isotopes, with half-lives greater than 20 years, except for (a) high-level radioactive waste; (b) waste that the U.S. Department of Energy has determined, with the concurrence of the Administrator of the U.S. Environmental Protection Agency, does not need the degree of isolation required by 40 CFR 191; or (c) waste that the U.S. Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR 61.

transuranic radionuclide

Any radionuclide having an atomic number greater than 92.

treatment

Any activity that alters the chemical or physical nature of a hazardous waste to reduce its toxicity, volume, mobility or to render it amenable for transport, storage, or disposal.

treatment facility

Land area, structures, and/or equipment used for the treatment of waste or spent nuclear fuel.

TRUPACT

Transuranic Package Transporter. (See TRUPACT II Container.)

TRUPACT II Container

The package designed to transport contact-handled transuranic waste to the Waste Isolation Pilot Plant site. It is a cylinder with a flat bottom and a domed top that is transported in the upright position. The major components of the TRUPACT-II are an inner, sealed, stainless steel containment vessel within an outer, sealed, stainless steel containment vessel. Each containment vessel is nonvented and capable of withstanding 50 pounds per square inch of pressure. The inner containment vessel cavity is 6 feet in diameter and 6.75 feet tall, with a capability of transporting fourteen 55 gallon drums, two standard waste boxes, or one 10-drum overpack.

United States Geological Survey (USGS)

A Federal agency that collects and analyzes information on geology and geological resources, including groundwater and surface water.

vadose zone

The zone between the land surface and the water table. Saturated bodies, such as perched groundwater, may exist in the vadose zone. Also called the zone of aeration and the unsaturated zone.

vitrification

A method of immobilizing waste (e.g., radioactive, hazardous, and mixed). This involves combining other materials and waste and melting the mixture into glass. The purpose of this process is to immobilize the waste so it can be isolated from the environment.

volatile organic compound

Compounds, such as xylene and toluene, that readily evaporate and vaporize at normal temperatures and pressures.

volcanic rift zones

Linear belts of basaltic vents marked by open fissures, monoclines, and small normal faults. Volcanic rift zones were produced during the propagation of vertical molten basaltic dikes that fed surface eruptions.

waste acceptance criteria

The requirements specifying the characteristics of waste and waste packaging acceptable to a waste receiving facility; and the documents and processes the generator needs to certify that waste meets applicable requirements.

waste acceptance specifications

The functions to be performed and the technical requirements for a Waste Acceptance System for accepting spent nuclear fuel and high-level waste into the Civilian Radioactive Waste Management System according to the *Waste Acceptance System Requirements Document* (DOE/RW-0352P, January 1993, Office of Civilian Radioactive Waste Management).

Waste Area Group (WAG)

Ten groupings of hazardous waste release sites under the INEEL Federal Facility Agreement and Consent Order (FFA/CO). Groupings are for efficiency in managing the assessment and cleanup process. Nine of these WAGs are associated with specific facilities, and the tenth is associated with the remaining miscellaneous facilities. Each WAG may be broken down into individual operable units.

waste certification

A process by which a waste generator certifies that a given waste or waste stream meets the waste acceptance criteria of the facility to which the generator intends to transport waste for treatment, storage, or disposal. A combination of waste characterization, documentation, quality assurance, and periodic audits of the certification program accomplish certification.

waste characterization

See characterization.

Waste Isolation Pilot Plant (WIPP)

A DOE facility near Carlsbad, New Mexico, authorized to dispose of defense-generated transuranic waste in a deep geologic repository in a salt layer 2,150 feet underground.

waste management facility

All contiguous land, structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of waste or spent nuclear fuel. A facility may consist of several treatment, storage, or disposal operational units (for example, one or more landfills, surface impoundments, or combinations of them).

waste minimization

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

waste stream

A waste or group of wastes with similar physical form, radiological properties, U.S. Environmental Protection Agency waste codes, or associated land disposal restriction treatment standards. It may be the result of one or more processes or operations.

wind rose

A diagram showing how often winds of various speeds blow from different directions. This is usually based on annual averages.