

## Appendix A

### Definition of Terms and Acronyms

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# Appendix A

## Definition of Terms and Acronyms

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### Acronyms

AAMSR	Aggregate Area Management Study Report
ADS	Activity Data Sheet
AFP	Approved Funding Plan
ALARA	As Low As Reasonably Achievable
ALE	Fitzner/Eberhardt Arid Lands Ecology Reserve
AMU	Aqueous Makeup Unit
ARAR	Applicable, or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
BAT/AKART	Best Available Technology/All Known and Reasonable Technologies
BWIP	Basalt Waste Isolation Project
CAMU	Corrective Action Management Unit
CDR	Conceptual Design Report
CERCLA	<i>Comprehensive Environmental Response, Compensation and Liability Act</i>
CFR	<i>Code of Federal Regulations</i>
CMD	Corrective Measures Design
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CPP	CERCLA Past Practice
CRP	Community Relations Plan
DCRT	Double-Contained Receiver Tank
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy - Headquarters
DOE-RL	DOE Richland Operations Office (also known as RL)
DOI	U.S. Department of Interior
DQO	Data Quality Objectives
DRC	Dispute Resolution Committee
DST	Double Shell Tank
D&D	Decommissioning and Decontamination
DW	Dangerous Waste
EA	Environmental Assessment
ECA	Environmental Corporation of America
Ecology	State of Washington Department of Ecology
EEA	Engineering Evaluation of Alternative
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EM	DOE Office of Environmental Management
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration

## Acronyms

FDC	Functional Design Criteria
FFTF	Fast Flux Test Facility
FFS	Focused Feasibility Study
FS	Feasibility Study
GIS	Geographic Information System (used on page G-2)
GPM	Gallons Per Minute
GPS	Global Positioning System
HLW	High-Level Waste
HSWA	<i>Hazardous and Solid Waste Amendments of 1984</i>
HSWMUR	Hanford Site Waste Management Units Report
HWMA	<i>Hazardous Waste Management Act</i>
HWVP	Hanford Waste Vitrification Plant
IAMIT	Inter-Agency Management Integration Team
IM	Interim Measure
IRA	Interim Response Actions
IRM	Information Records Management
ISS	Interim Safe Storage (of the reactors)
ISV	In-situ Vitrification
LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
LES	Liquid Effluent Study
LFI	Limited Field Investigation
LLBG	Low-Level Burial Ground
LLW	Low-Level Waste
LWDF	Liquid Waste Disposal Facility
M/S	Milestone(s)
MASF	Maintenance and Storage Facility
MB	Megabyte
MCL	Maximum Contaminant Level
MREM	Millirem
MWTF	Multi-Function Waste Tank Facility
NCAW	Neutralized Current Acid Waste
NCP	<i>National Oil and Hazardous Substances Contingency Plan</i>
NCRW	Neutralized Cladding Removal Waste
NEPA	<i>National Environmental Policy Act</i>
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Deficiency
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRDWL	Nonradioactive Dangerous Waste Landfill
O&M	Operation and Maintenance
OMB	Office of Management and Budget
ORP	Office of River Protection

## Acronyms

OU	Operable Unit
PA/SI	Preliminary Assessment and Site Investigation
PCHB	Pollution Control Hearings Board
pCi/L	Pico Curies per Liter
PFP	Plutonium Finishing Plant (Z Plant)
PIP	Public Involvement Plan
PNRS	Preliminary Natural Resource Survey
PUREX	Plutonium/Uranium Extraction
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QAPP	Quality Assurance Project Plan
R&D	Research and Development
RA	Remedial Action
R-CPP	RCRA-CERCLA Past Practice
RCRA	<i>Resource Conservation and Recovery Act</i>
RCW	<i>Revised Code of Washington</i>
RD	Remedial Design
RD/RA	Remedial Design and Remedial Action
RD&D	Research, Development, and Demonstration
REDOX	Reduction-Oxidation (Facility)
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RFI/CMS	RCRA Facility Investigation/Corrective Measures Study
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RL	Richland Operations Office (DOE)
RMW	Radioactive Mixed Waste
ROD	Record of Decision
SAFER	Streamlined Approach for Environmental Restoration
SAP	Sampling and Analysis Plan
SARA	<i>Superfund Amendments and Reauthorization Act of 1986</i>
SEC	Senior Executive Committee
SHMS	Standard Hydrogen Monitoring Systems
SMS	Site Management System
SST	Single-Shell Tank
SWMU	Solid Waste Management Unit
TAG	Technical Assistance Grant
TBD	To Be Decided / Determined
TCD	Tank Characterization Database
TCRs	Tank Characterization Reports
TMACS	Tank Monitor and Control System
TPA	Tri-Party Agreement
TRU	Transuranic

## Acronyms

TRUEX	Transuranic Extraction (process)
TRUSAF	Transuranic Waste Storage and Assay Facility
TSD	Treatment, Storage, and Disposal
TWAP	Tank Waste Analysis Plan
TWINS	Tank Waste Information Network System
TWRS	Tank Waste Remediation System
U.S.C.	<i>U.S. Code</i>
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
USQ	Unreviewed Safety Questions
WAC	<i>Washington Administrative Code</i>
WESF	Waste Encapsulation and Storage Facility
WGL	Washington Guidance Level
WIDS	Waste Information Data System
WPPSS	Washington Public Power Supply System
WRAP	Waste Receiving and Processing
WM	Waste Management

## Definition of Terms Used in the Action Plan

**Acceptance Criteria:** A set of DOE-HQ approved criteria, as discussed in Section 14 of this document, which ensure a facility has: 1) successfully completed the facility transition phase, 2) prepared surveillance and maintenance (S&M) plan, and 3) maintained the S&M plan as a current document. As a result of meeting these conditions, the DOE Office of Environmental Restoration makes a determination of whether to accept the facility into the S&M phase (until a priority decision is made to disposition the facility).

**Administrative Record:** The administrative record is the body of documents and information that is considered or relied upon in arriving at a final decision for a remedial action, interim response action (i.e. removal action), corrective measure, interim measure, RCRA permit, or approved RCRA closure plan.

**Agency (Agencies):** Unless otherwise specified, the State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

**Agency for Toxic Substances and Disease Registry:** The agency under the Department of Health and Human Services, Public Health Service, that is responsible for conducting health assessments at Superfund sites for EPA. (see Section 7.7)

**Agreement:** The Hanford Federal Facility Agreement and Consent Order, including all attachments, addenda and modifications, which are required to be written and to be incorporated into or appended.

**Applicable or Relevant and Appropriate Requirement (ARAR):** Any standard, requirement, criteria or limitation as provided in Section 121(d)(2) of CERCLA. (see Section 7.5)

**Authority:** Legal jurisdiction enabling a governmental agency to administer and implement federal or state laws and regulations.

**B Plant:** Old Hanford plutonium recovery and separations facility converted in 1968 for waste fractionation.

**Base RCRA Program:** Those elements of the federal Resource Conservation and Recovery Act of 1976, as amended, for which the state of Washington has received authorization to implement. The state implements its own dangerous waste program in lieu of the base RCRA program.

**Burial Ground:** Land area specifically designated to receive contaminated waste packages and equipment, usually in trenches covered with overburden.

**Carbon Tetrachloride:** A chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Carbon tetrachloride is a known human liver carcinogen via inhalation and ingestion. Other toxic effects include central nervous system damage.

## Definition of Terms Used in the Action Plan

**Chromium:** An inorganic element, found in the environment in two forms: hexavalent and trivalent. Hexavalent chromium is carcinogenic via inhalation; hexavalent and trivalent chromium are less toxic via ingestion. Hexavalent chromium is a primary contaminant in groundwater beneath the 100 Area at Hanford.

**CERCLA Past Practice (CPP):** A process by which a past practice unit containing hazardous substances will be addressed for response action (as opposed to RCRA past practice). (see Section 7.3)

**Closure:** Actions taken to reduce the human health and environmental threats posed by a hazardous waste treatment, storage and/or disposal (TSD) facility or unit (along with its structures and contiguous land) after the facility or unit has received its final volume of hazardous waste. Closure must satisfy applicable requirements of 40CFR Part 264, subpart G, and of WAC 173-303-610. For purposes of this Agreement, use of the word closure also includes actions necessary for the facility or unit to meet post closure requirements.

**Code of Federal Regulations (CFR):** Regulations developed by the federal government to implement statutory requirements.

**Community Relations Plan (CRP):** A report that assesses and defines a community's informational needs concerning potential hazards posed by conditions at hazardous waste sites. The CRP also encourages and ensures two-way communication between an affected community and the public agency overseeing the site cleanup. (see Section 10.0)

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),** also known as Superfund: The federal statute enacted in 1980 and reauthorized in 1986, which provides the statutory authority for cleanup of hazardous substances that could endanger public health or welfare or the environment.

**Conceptual Design Report:** DOE's initial design phase for a new hazardous waste management or support unit at Hanford; a specific element necessary in DOE's planning and budget process.

**Confined Aquifer:** An aquifer having defined, relatively impermeable upper and lower boundaries and the pressure of which is significantly greater than atmospheric.

**Containment Building (for the purposes of RCRA Interim Status Standards):** A completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units. It has a primary barrier designed to be: 1) sufficiently durable to withstand the movement of personnel and the handling of equipment within the unit and 2) operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment. (Ref. 40 CFR 265.1100)

## Definition of Terms Used in the Action Plan

**Contamination (Groundwater and Surface Water):** An impairment of quality by biological, chemical, or radiological materials that lowers the water quality to a degree which creates a potential hazard to the environment, public health, or interferes with a beneficial use.

**Corrective Action:** The RCRA processes of interim and corrective measures. See definitions for Interim Measure and Corrective Measure.

**Corrective Measure:** An action taken under RCRA authority to permanently resolve a hazardous waste release or to significantly reduce the potential for a future release from a unit or group of units.

**Corrective Measures Implementation (CMI):** The step in RCRA past practice process in which a corrective action system is designed and implemented; comparable to the Remedial Design and Remedial Action phases of the CERCLA process. (see Section 7.4)

**Corrective Measures Study (CMS):** The step in the RCRA past practice process in which alternatives for a corrective action system are investigated and screened; comparable to the Feasibility Study phase of the CERCLA process. (see Section 7.4)

**Crib:** An underground structure designed to receive liquid waste that can percolate into the soil directly and/or after travelling through a connected tile field.

**Cyanide:** An extremely hazardous substance used in the extraction of ores, treatment of metals, and in the manufacture of pharmaceuticals.

**Dangerous Waste (DW):** Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

**Data Quality Objective (as used for a planning process):** The formal decision making process between the laboratory and the client that defines necessary analytical requirements based on the end-use of the data.

**Days:** Calendar days, unless otherwise specified. Any submittal, Written Notice of Position or written statement of dispute that would be due under the terms of this Agreement on a Saturday, Sunday or federal or state holiday shall be due on the following business day.

**Deactivation:** Activities associated with removing facility systems and/or areas from operational service with the intent of being ready for facility transition to either convert the facility for another use or move to permanent shutdown. These activities could include the removal of fuel, draining and/or de-energizing of systems, removal of accessible stored radioactive and hazardous materials and other actions to place the facility systems and/or areas in a safe and stable condition so that a surveillance and maintenance program will be able to most cost effectively prevent any unacceptable risk to the public or the environment until ultimate disposition of the facility. (Note: These activities are usually conducted during the facility transition phase.)

## Definition of Terms Used in the Action Plan

Decontamination and Decommissioning (D&D)-(as defined by DOE Order 5840.2 for the D&D Program):

- Decontamination: The process of removing radioactive and/or hazardous contamination from facilities, equipment, or soils by physical removal, washing, heating, chemical action, mechanical cleaning or other techniques to achieve a stated objective or end condition.
- Decommissioning: Actions taken to reduce the potential health and safety impacts of DOE contaminated facilities, including activities to stabilize, reduce, or remove radioactive materials or to demolish the facilities.

Definitive Design: DOE's design phase in which detailed construction drawings and specifications are prepared following conceptual design for a new, or modification to a facility or unit.

Dismantlement: The process of disassembly and/or demolition of all or portions of a facility, and appropriate disposal of the residue.

Double Shell Tank (DST): A reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes; annulus is instrumented to permit detection of leaks from inner liner.

Entombment: The remedial process to encapsulate a facility in place as a method of final disposition once cleanout has been completed.

Executive Manager: For DOE, executive managers are the Assistant Managers with responsibility for implementing terms and conditions of the Agreement regarding the projects under his/her authority. For Ecology, the executive manager is the Program Manager of the Nuclear Waste Program. For EPA Region 10, the Executive Manager is the Program Manager, Hanford Project Office.

Expedited Response Action: A general term referring to either an interim response action (i. e. removal action) under authority of CERCLA, or an interim measure under the authority of HSWA.

Extremely Hazardous Waste (EHW): Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

Facility (as applied to the Facility Disposition Process [Section 8]): Buildings and structures used for material handling and processing, storage, maintenance, administrative, or support activities. Facilities may be above or below grade and may be contaminated or uncontaminated. (Note: This definition differs substantially from "facility" as defined under WAC 173-303-040, Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] or RCRA).

## Definition of Terms Used in the Action Plan

**Facility Decommissioning Process:** The sequential phases for a facility, once a shutdown decision is made by DOE-HQ, beginning with facility transition, through surveillance and maintenance (S&M), and final facility disposition.

**Facility Disposition Phase:** Final period in the life of a facility. This phase occurs when no future use is identified as part of the DOE-HQ facility assessment process and priority is given to proceed with disposition. This phase primarily involves processes to achieve a final end state for the facility (e.g., entombment, and/or dismantlement and site restoration), including closure of any TSDs. Facility disposition may be integrated with cleanup of past-practice units covered under CERCLA Remedial Action or RCRA Corrective Measure Authority.

**Facility End Point Criteria (as used during facility transition phase):** Facility-specific criteria prepared during facility transition planning to support development of the transition planning documentation, work plans, and ultimately the project management plan (see Section 14.0). Collectively these criteria provide a technical description of the acceptable state of facility components to be achieved at the end of the facility transition phase and are prepared consistent with EM acceptance criteria objectives outlined in the DOE-HQ EM Guidance Document. This definition includes a status of how tanks, piping, rooms/areas and miscellaneous systems and equipment will be left at the end of the transition phase for a period of surveillance and maintenance prior to final disposition. (Note: End point criteria for regulated units and hazardous substances that will remain in the facility following transition will be approved by the regulators.)

**Facility End State Criteria (as used during facility disposition phase):** Facility-specific criteria prepared during facility disposition planning to support development of planning documentation, work plans, and ultimately the disposition Project Management Plan (see Section 14.0). It provides a technical description and end state of the facility or facility area to be achieved (in accordance with the NEPA process, CERCLA and/or RCRA requirements, stakeholder input, and final land use planning) at the end of the facility disposition phase.

**Facility Startup:** The time at which the Department of Energy has completed their readiness assessment and has provided the operating contractor approval via letter to start initial operations. At this time the contractor has completed their readiness review verifying that: 1) all operability tests have been completed, 2) operating procedures are available for use, and 3) a trained operating staff capable of operating the facility is in place.

## Definition of Terms Used in the Action Plan

**Facility Surveillance and Maintenance (S&M) Phase:** Period in the life of a facility following completion of the transition phase until such time as the facility is dispositioned for other use, or facility disposition has commenced. The S&M program provides direction, management, and performance assessments to be carried out in accordance with an approved S&M Plan. The S&M phase ensures that facilities are maintained in a safe and environmentally sound manner until a final disposition occurs. In addition, the S&M level of effort will be established in the S&M Plan to minimize the costs of final disposition (i.e. as low as economically achievable) whether the facility is planned by DOE-HQ to be released for alternate use or for dismantlement and site restoration, and/or entombment under the facility disposition phase.

**Facility Transition Phase:** A period of time during which activities necessary to place the subject facility in a safe, stable, and environmentally sound condition, suitable for an extended period of surveillance and maintenance pending final disposition are completed. Facility transition starts with termination of operations, includes the establishment of a S&M program, and ends with the achievement of facility-specific end point criteria.

These actions could include the collective conversion of the facility for potential other uses or permanent shutdown; by the removal of fuel, draining and/or de-energizing of systems, removal of accessible stored radioactive and hazardous materials and other deactivation actions to place the facility in a safe and stable condition for the surveillance and maintenance program. This phase usually involves stabilization and deactivation processes and may also include some decontamination activities necessary to effectively result in reduced S&M cost for the facility. (Note: Facility transition documentation describing end point criteria for regulated units and hazardous substances that will remain in the facility following transition will be approved by the regulators.)

**Fast Flux Test Facility (FFTF):** A liquid metal test reactor that served as a test tool for advanced reactor technology, fusion research, space power systems and isotope production.

**Feasibility Study (FS):** The step in the CERCLA process in which alternatives for a remedial action system are investigated and screened (see Section 7.3).

**Final Disposition of the Reactors:** Final disposition of the reactors will consist of removing the reactor cores from their present location to a disposal facility in the 200 Area of the Hanford Site as specified in the FEIS-ROD. Associated structure(s) and residual wastes will be removed so as to meet established cleanup requirements pertaining to Hanford's 100 Area. Resulting wastes will be disposed at Hanford's ERDF, or other disposal facility as may be approved by the parties.

**Fiscal Year (FY):** As used in this document, the federal government fiscal year, October 1 through September 30. Note that the State of Washington fiscal year is July 1 through June 30.

**Focused Feasibility Study:** A study conducted such that a limited number of alternative are evaluated that are focused to the scope of the response action planned.

## Definition of Terms Used in the Action Plan

**French Drain:** A rock-filled encasement with an open bottom to allow seepage of liquid waste into the ground.

**Future Site Uses Working Group:** A group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and public interest groups with interests in Hanford. The group was charged with the task of articulating a range of visions for the future use of the Hanford Site, discussion on the implications of those visions on cleanup, and probing for commonalities and convergencies within the participants' visions as they applied to cleanup scenarios and priorities.

**Groundwater:** Water which fills the spaces between soil, sand, rock, and gravel particles beneath the earth's surface. Rain that does not immediately flow to streams and rivers slowly percolates down through the soil to a point of saturation to form groundwater reservoirs. Groundwater flows at a very slow rate, compared to surface water, along gradients which often lead to river systems. If occurring in significant quantities, groundwater can be withdrawn for domestic, industrial, and agricultural purposes.

**Grout:** A fluid mixture of cementitious materials and liquid waste that sets up as a solid mass and is used for waste fixation and immobilization.

**Hanford Operable Units Report:** Documents the assignment of individual units to operable units and provides the rationale and justification for the prioritization of the operable units for the remedial investigation process.

**Hanford Past Practice Strategy:** A strategy developed with the primary objective to develop a uniform, stream-lined process to meet statutory requirements and integrate/coordinate CERCLA RI/FS and RCRA past-practice RFI/CMS requirements through effective cleanup actions.

**Hanford Site:** Also referred to as "Hanford" or "Site", the approximately 560 square miles in Southeastern Washington State, excluding leased lands, and State and Bonneville Power Administration owned lands, which is owned by the United States and which is commonly known as the Hanford Reservation (Figure 7-1 in the Action Plan). This definition is not intended to limit CERCLA or RCRA authority regarding hazardous wastes, substances, pollutants or contaminants which have migrated off the Hanford Site.

**Hanford Site Waste Management Units Report (HSWMUR):** Document listing all known waste management units at Hanford and summarizes the wastes handled, dates of use and other information about each unit. (see Section 3.5)

**Hanford Waste Vitrification Plant (HWVP):** A facility to be constructed for treatment of high level liquid radioactive waste. Liquids are vitrified or glassified in order to reduce the potential for radioactive and hazardous contamination leaching into the environment. This unit will be regulated under RCRA.

## Definition of Terms Used in the Action Plan

*Hazardous and Solid Waste Amendments of 1984*, P.L. 98-616 (HSWA): The reauthorization of the RCRA program, enacted by Congress on November 8, 1984.

**Hazardous Substance:** Substances regulated under CERCLA, as defined in CERCLA Sec. 101(14).

**Hazardous Waste:** Those wastes included in the definitions of RCRA 1004(5) and RCW 70.105.010(15).

**Hazardous Waste Constituent**, also referred to as “hazardous constituent” or “constituent”: A constituent that caused the Administrator of the Environmental Protection Agency to list the hazardous waste in 40 CFR Part 261, Subpart D or a constituent listed in Table 1 of 40 CFR 261.24. (Hazardous constituents are listed in 40 CFR Part 261, Appendix VIII.)

*Hazardous Waste Management Act (HWMA)*: The Hazardous Waste Management Act, codified at Ch. 70.105 RCW, and its implementing regulation at Ch. 173-303 Washington Administrative Code. (A state program, commonly referred to as the State Dangerous Waste Program, which regulates the generation, treatment, storage and/or disposal of hazardous wastes in cooperation with RCRA).

**Imminent and Substantial Endangerment:** A situation in which the lead regulatory agency and DOE immediately respond to a release of a hazardous substance or hazardous waste in order to abate the danger or threat to public health or welfare or the environment. Such action may be taken under CERCLA, RCRA, or HWMA authority, as appropriate.

**In-Situ Vitrification (ISV):** A process by which electrical current is passed through contaminated soils in-place heating the soil to a molten state. While cooling the soils become a homogenous glass-like block thereby minimizing the leachability of contaminants.

**Interagency Management Integration Team (IAMIT):** A committee of the Executive Managers from each agency with the functions of negotiation of new milestones, adjustment of scope and schedule of existing interim milestones, and Tri-Party Agreement Issue Resolution/Dispute Resolution. The IAMIT also serves as the interface with the Hanford Advisory Board (HAB).

**Interim Isolation (as pertains to Single-Shell Tanks):** Disconnecting and blanking or capping pipelines from SST systems and installing barriers to avoid inadvertent liquid addition.

**Interim Measure (IM):** An expedited response action taken under RCRA authority to mitigate a hazardous waste release or to reduce the potential for a future release from a unit. (see Section 7.2.4)

**Interim Response Action (IRA):** An expedited response action taken under CERCLA authority to mitigate a hazardous substance release or to reduce the potential for a future release from a unit. (see Section 7.2.4) Referred to as a removal action in the NCP.

## Definition of Terms Used in the Action Plan

**Interim Safe Storage (ISS) of the Reactors:** Interim Safe Storage (ISS) is the first stage of final disposition. It consists of (i) ensuring that facility hazardous substances are and will remain safe and secure, and (ii) reducing the footprint of the reactor building to the primary shield wall, and sealing all openings such that the facility is in an environmentally safe and secure condition prior to initiation of disposition phase II. During reactor ISS all ancillary structures surrounding the shield wall will be removed. Resulting wastes will be disposed at Hanford's Environmental Restoration Disposal Facility (ERDF), or other disposal facility as may be approved by the parties. On completion of ISS, surveillance and maintenance systems will be upgraded as appropriate to provide for remote monitoring of the remaining structure prior to disposition phase II.

**Interim Stabilization (as pertains to Single-Shell Tanks):** Is the removal of pumpable supernatant and interstitial liquid from SST systems into DST systems. As much liquid as practicable will be removed. Supernatant is free standing liquid. Interstitial liquid is that liquid in the waste matrix contained within the pore spaces of the salts and sludges, some of which is capable of gravity drainage while the rest is held by capillary forces. Remaining uncompleted milestones and associated target dates for interim stabilization of DOE's Single-Shell Tanks are deleted from the scope of the Tri-Party Agreement.

**Interim Status:** A RCRA provision which grants a facility the right to continue to operate (treat, store, or dispose of hazardous waste) in accordance with applicable RCRA or state regulations until a RCRA permit is issued.

**Land Disposal Restriction Waste (LDR):** RCRA hazardous wastes, subject to Section 3004(d) through (m) of RCRA and 40 CFR 268.

**Lead Regulatory Agency:** The agency (EPA or Ecology) which is assigned regulatory oversight responsibility with respect to actions under this Agreement regarding a particular Operable Unit, TSD group/unit or milestone pursuant to Section 5.6 of the Action Plan. The designation of a Lead Regulatory Agency shall not change the jurisdictional authorities of the Parties.

**National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** The title of the federal regulations (40 CFR Part 300) promulgated under the authority of CERCLA.

**National Priorities List (NPL):** EPA's list of priority waste sites containing hazardous substances that will be investigated and cleaned up under the Superfund program.

**Notice of Deficiency (NOD):** A RCRA administrative action in which the lead regulatory agency defines specific deficiencies or omissions in RCRA primary documents. (see Section 9.2)

**Office of River Protection (ORP):** DOE's organizational structure at the Hanford Site that is responsible for managing all aspects of the Tank Waste Remediation System (Also referred to as the Hanford Tank Farm Operations). The Manager of the Office of River Protection reports directly to DOE's Assistant Secretary of Energy for Environmental Management.

## Definition of Terms Used in the Action Plan

**Operable Unit:** A discrete portion of the Hanford Site, as identified in Section 3.3 of the Action Plan. An operable unit at Hanford is a group of land disposal sites placed together for the purposes of doing a Remedial Investigation/ Feasibility Study (RI/FS) and subsequent cleanup actions. The primary criteria for placement of a site into an operable unit includes geographic proximity, similarity of waste characteristics and site type, and the possibility for economies of scale.

**Parties:** The U.S. Environmental Protection Agency, the State of Washington Department of Ecology, and the U.S. Department of Energy, all of which are signing the Agreement and Action Plan.

**Plutonium Uranium Extraction (PUREX):** Latest in a line of separation technologies, preceded by bismuth phosphate and REDOX.

**Post-Closure:** The period of care, including maintenance, monitoring, and reporting, that is undertaken at a facility or unit (e. g. landfill or impoundment closed as disposal facilities or units) after closure to ensure continued environmental safety. Post closure care must satisfy applicable requirements of 40 CFR Part 264, subpart G, and of WAC 173-303-610.

**Preliminary Assessment and Site Inspection (PA/SI):** Normally the first step in analyzing the nature and severity of contamination at a potential CERCLA site and is used to determine if a site should be nominated for the NPL. Based upon extensive documentation previously submitted to EPA by DOE, this requirement is considered to have been satisfied for the Hanford Site.

**Primary Documents:** Documents which contain information, documentation, data, and proposals upon which key decisions will be made with respect to the remedial action or permitting process. Primary documents are subject to dispute resolution and are part of the administrative record. (see Section 9.2)

**Project Manager:** The individual responsible for implementing the terms and conditions of the Agreement at the specific operable unit level on behalf of his/her respective Party. The project manager has direct responsibility for completion of targets and milestones and has authority to agree to modifications of scope and schedule, in accordance with Section 12.0 of the Action Plan.

**Quality Assurance (QA):** The systematic actions necessary to provide adequate confidence that a material, component, system, process, or facility performs satisfactorily, or as planned in service.

**Quality Control (QC):** The quality assurance actions that control the attributes of a material, process, component, system, or facility in accordance with predetermined quality requirements.

## Definition of Terms Used in the Action Plan

**Radioactive Mixed Waste:** Also called “mixed waste”, wastes that contain both hazardous waste subject to RCRA, as amended, and radioactive waste subject to the Atomic Energy Act of 1954, as amended. Mixed waste is regulated under the State Dangerous Waste Program.

**Radioactive Waste:** A solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities except for radioactive material from post-weapons-test activities.

**Record of Decision (ROD):** The CERCLA document used to select the method of remedial action to be implemented at a site after the Feasibility Study/Proposed Plan process has been completed. (see Section 7.3)

**Remedial Action:** An action taken under CERCLA authority to permanently resolve a hazardous substance release or to significantly reduce the potential for a release from a unit or group of units.

**Remedial Action (RA) Phase:** The CERCLA process of remedial action implementation after the investigative steps have been completed and after issuance of the Record of Decision and after Remedial Design has been completed. (see Section 7.3)

**Remedial Design (RD):** The CERCLA process of design for the remedial action alternative that was selected in the Record of Decision. (see Section 7.3)

**Remedial Investigation (RI):** The CERCLA process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The RI is done in conjunction with the Feasibility Study. (see Section 7.3)

***Resource Conservation and Recovery Act (RCRA):*** 42 U.S.C. Sec. 6901 et seq., as amended. For purposes of this Agreement, “RCRA” also includes the HWMA Ch. 70.105 RCW. (A federal law enacted in 1976 that regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes).

**Response Action:** The CERCLA processes of interim response and remedial actions. See definitions for Interim Response Action and Remedial Action.

**Responsiveness Summary:** A summary of oral and/or written public comments received during a comment period on key documents, and agency responses to those comments. The responsiveness summary is especially valuable during the decision process at a site, because it highlights community concerns about the proposed decision.

**RCRA Facility Assessment (RFA):** The initial RCRA process to determine whether corrective action for a RCRA past practice unit is warranted, or to define what additional data must be gathered to make this determination; analogous to a CERCLA Preliminary Assessment and Site Inspection (see Section 7.4)

## Definition of Terms Used in the Action Plan

RCRA Facility Investigation (RFI): The RCRA process of determining the extent of hazardous waste contamination; analogous to the CERCLA Remedial Investigation. (see Section 7.4)

RCRA-CERCLA Past Practice (R-CPP): A process by which a past practice unit containing hazardous wastes or hazardous constituents and hazardous substances will be addressed for RCRA corrective action and CERCLA Cleanup, regardless of the date waste was received or discharged at a unit. (see Section 7 for the process)

RCRA Permit: A permit under RCRA and/or HWMA for treatment, storage or disposal of hazardous waste.

*Revised Code of Washington (RCW)*: The Washington State statutes.

Risk Assessment: An analysis of the potential adverse effects to human health and/or the environment (current or future) caused by radionuclide and/or hazardous substance releases from a site in the absence of any actions to control or mitigate these releases.

S&M Surplus Facilities: Facilities on the Hanford Site transferred from DOE Operations to the surveillance and maintenance phase under the responsibility of EM (Office of Environmental Restoration) prior to the establishment of the EM (Office of Facility Transition). The facility decommissioning process for these special case facilities will be completed entirely under the disposition phase funded on a DOE-HQ priority basis by EM (Office of Environmental Restoration).

Secondary Document: As distinguished from Primary Document, it is considered to be a supporting document providing information or data and does not, in itself, reflect key decisions. A secondary document is subject to review by the regulatory agencies and is part of the administrative record. It is not subject to dispute resolution. (see Section 9.2)

Shutdown Decision: A formal DOE-HQ documented determination that a facility is surplus (see surplus facility).

Signatories: The Signatories are as follows: DOE – the Manager, Richland Operations Office and/or the Manager, Office of River Protection, as appropriate. EPA – the Regional Administrator for Region X. State of Washington Department of Ecology – the Director.

Single-Shell Tank (SST): At Hanford, 149 single-shell carbon steel tanks (ranging in size from 55,000 to 1 million gallons) that have been used to store high-level radioactive wastes.

Skyshine: Gamma radiation emitted from a source that is reflected off particles in the air, sometimes landing several hundred meters from their point of origin.

## Definition of Terms Used in the Action Plan

**Stabilization:** The combination of steps or activities to secure, convert and/or confine radioactive and/or hazardous material within enclosures, exhaust ducts, and process equipment within a facility. These activities may include; removal of loose equipment items, draining process fluids to the maximum extent practicable, coating internal surfaces with a fixative coating, removal of waste materials, installing seals and blank flanges, termination of nonessential energy sources, and/or conversion of reactive residues to a stable form suitable for extended safe storage. (Note: Stabilization activities are usually performed during the facility transition phase, but may be performed before the transition phase as a best management practice for cost efficiency, as low as reasonably achievable [ALARA], and/or safety purposes.)

**State of Washington Department of Ecology (Ecology):** The State of Washington Department of Ecology, its employees and Authorized Representatives.

**State-only Wastes:** Any liquid, solid, gas or sludge, regardless of quantity that exhibits any of the physical, chemical, or biological properties described in WAC 173-303-070 through 103.

***Superfund Amendments and Reauthorization Act of 1986 (SARA):*** The reauthorization of the CERCLA statute, enacted by Congress in December 1986.

**Support Agency:** The regulatory agency (EPA or Ecology) which is not designated as the lead regulatory agency at an operable unit. The support agency will provide assistance to the lead regulatory agency, as needed.

**Surplus Facility:** Any facility or site (including equipment) that has no identified programmatic use by the operating phase Program Secretarial Officer.

**Surveillance and Maintenance:** Activities conducted to assure that a site or facility remains in a physically safe and environmentally secure condition, and includes periodic inspections and monitoring of the property, appropriate contamination control actions, and required maintenance of barriers controlling access. (Note: This process continues as a best management practice through the facility disposition phase until final disposition is achieved as defined in Section 8.0 of this Action Plan.)

**Tank Waste Task Force:** A group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and public interest groups focused on Hanford, labor, and public health. The task force was charged with providing values relative to the Tank Waste Remediation System and with principles for the overall Tri-Party Agreement package during the renegotiations of the Tri-Party Agreement, Summer 1993.

**Technical Assistance Grant (TAG):** A grant available from EPA designed to enhance public participation as described in Section 117 of CERCLA. A maximum of \$50,000 per NPL site is available. Grant money must be used for the purpose of interpreting information regarding CERCLA activity at the site.

## Definition of Terms Used in the Action Plan

**Treatment, Storage, or Disposal (TSD):** A RCRA term referring to the treatment, storage, or disposal of hazardous waste. Under RCRA, TSD activity can occur only at units which received or stored hazardous waste after November 19, 1980, the effective date of the RCRA regulations. The effective date for mixed waste is August 19, 1987, and the effective date for State-only dangerous waste is March 10, 1982.

**Treatment, Storage, or Disposal (TSD) Group:** A grouping of TSD units for the purpose of preparing and submitting a permit application and/or closure plan pursuant to the requirements under RCRA, as determined in the Action Plan.

**Treatment, Storage, or Disposal (TSD) Unit:** A unit used for treatment, storage, or disposal of hazardous waste and is required to be permitted and/or closed pursuant to RCRA requirements as determined in this Action Plan.

**United States Department of Energy (DOE):** The United States Department of Energy, its employees and Authorized Representatives.

**United States Environmental Protection Agency (EPA):** The United States Environmental Protection Agency, its employees and Authorized Representatives.

**Unplanned Release:** An unintentional release, including a spill, of hazardous waste or hazardous substance into the environment.

**Vadose Zone:** The unsaturated region of soil between the ground surface and the water table.

**Validated Data:** Data that DOE has determined meets criteria contained in the “Data Validation Guidelines for Contract Laboratory Program Organic Analyses” and “Data Validation Guidelines for Contract Laboratory Program Inorganic Analyses” that are contained in the Sample Management Administrative Manual.

**Verified Data:** Data that has been checked for accuracy and consistency by DOE following a transfer action (e.g., from manual log to computer or from distributed data base to centralized data repository).

**Vitrification:** [see Hanford Waste Vitrification Plant (HWVP) or In-Situ Vitrification.]

**Washington Administrative Code (WAC):** The Washington State regulations.

**Waste Information Data System (WIDS):** A database which identifies all waste management units on the Hanford Site. It describes the current status of each unit, along with descriptive information. (see Section 3.5)

## Definition of Other Technical Terms

Note: These terms are not considered part of the Action Plan, but are provided to the reader for informational purposes only.

**Absorption:** The process by which radiation imparts some or all of its energy to any material through which it passes; the taking up of a substance by another substance.

**Alpha-Emitter:** A radioactive substance, such as plutonium, that emits alpha particles. Alpha radiation is much less penetrating than gamma or beta radiation, but is much more ionizing, and therefore potentially extremely toxic.

**Aquifer:** A geologic formation, group of formations, or part of a formation capable of yielding significant quantities of groundwater to wells, springs, or other points of discharge.

**Aquifer System:** A logical grouping of aquifers in a region, grouped on the basis of characteristics such as superficial geology, water quality, and vulnerability.

**Annulus:** Also called “annular space”, this is the space between the outer and inner casing of a well, or the space between the wall of the drilled hole and the casing.

**As Low As Reasonably Achievable (ALARA):** A radiation protection principle applied to radiation exposure, with costs and benefits taken into account.

**Background Water Quality:** The natural levels of chemical, physical, biological, and radiological constituents or parameters upgradient of a unit, practice, or activity that have not been affected by that unit, practice, or activity.

**Barrier:** A manmade addition to a disposal site that is designed to retard or preclude contaminant transport and/or to preserve the integrity of the disposal site.

**Basalt:** A dark, fine-grained, extrusive igneous rock.

**Basalt Waste Isolation Project (BWIP):** Program to study Hanford as a possible location for the high-level nuclear waste repository.

**Beneficial Uses:** Uses of waters of the state that include but are not limited to use for domestic water, irrigation, agriculture, fish, shellfish, recreation, industrial water, and generation of electric power.

**Beta Radiation:** Essentially weightless charged particles (electrons or positrons) emitted from the nucleus of atoms undergoing nuclear transformation.

**Bottoms (tank bottoms):** The concentrated material remaining in the waste tanks after most of the contents have been pumped out for solidification or transfer to other storage tanks; refers also to specific tanks used to collect such bottoms waste from several other tanks.

## Definition of Other Technical Terms

**Byproduct Material:** Any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. (Definition is from Atomic Energy Act of 1954, as amended, 42 USC 2014(e)).

**Cold Standby:** A condition whereby a reactor is defueled and maintained in a state that will allow the reactor to be restarted, if necessary.

**Criteria:** Numerical or narrative values which represent the maximum level a contaminant must not exceed to maintain a given beneficial use.

**Curie (Ci):** The basic unit used to describe the intensity of radioactivity. A curie is equal to 37 billion disintegrations per second.

**Defense Waste:** Radioactive waste from any activity performed in whole or in part in support of DOE atomic energy defense activities; term excludes waste under purview of the Nuclear Regulatory Commission or generated by the commercial nuclear power industry.

**Ditch:** An unlined conveyance for transport of liquid wastes to a pond or trench structure designed for percolation.

**Drywell:** A drainage receptacle constructed by digging a hole and refilling with coarse gravel; also a watertight well casing used for inserting monitoring equipment.

**Enforcement Standard:** The value assigned to any contaminant for the purposes of regulating that contaminant.

**Ethylene Glycol:** An organic compound used primarily as an anti-freeze. Ethylene glycol is moderately toxic when ingested.

**Evapotranspiration:** The combined loss of water from soil by evaporation and from the surfaces of plant structures.

**Half-life:** The time required for a radionuclide's activity to decay to half its value, used as a measure of the persistence of radioactive materials; each radionuclide has a characteristic constant half-life.

**Halogenated Hydrocarbons:** Organic compounds containing atoms such as chlorine, fluorine, iodine, or bromine.

**Hydraulic Continuity:** A term used to describe the relationship between groundwater and surface water, wherein they are often connected, allowing flow in either or both directions.

**Iodine:** A gaseous inorganic chemical produced in the plutonium production reactors at Hanford. Radioactive isotopes of iodine are found in most radioactive waste streams at Hanford.

## Definition of Other Technical Terms

**Ion Exchange:** Process for selectively removing a hazardous constituent from a waste stream by reversibly transferring ions between an insoluble solid and the waste stream; the exchange medium (usually from a column of resin) can then be washed to collect the waste or taken directly to disposal. Both the residue and liquid stream from this process may still be a hazardous waste.

**Isotope:** Any of two or more forms of a chemical with the same atomic number and nearly identical chemical behavior but different atomic mass and physical (e.g. radioactive) properties.

**Jet Pumping:** A technique for removing interstitial liquor from single-shell tanks.

**Leachate:** The product obtained from the passage of water through landfills or storage piles.

**Lead:** A heavy metal used for shielding material in nuclear reactors. Lead can be toxic when ingested or inhaled. Lead can impair nervous system development in children and can cause nervous system damage in adults. Lead is also a reproductive toxin.

**Level of Detection:** The level at which a constituent can be detected by a department approved method of analysis.

**Liquid Waste Disposal Site:** Units used for discharge of contaminated liquids to the ground.

**Low-Level Waste (LLW):** Radioactive waste that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, byproduct material, or naturally occurring radioactive material.

**Lysimeter:** An instrument for measuring the water percolating through soils and determining the materials dissolved by the water.

**Maximum Contaminant Level (MCL):** The maximum level of a contaminant in water that can exist without harming the beneficial use of drinking water. Defined specifically in the Safe Drinking Water Act.

**N-Reactor:** N-Reactor is a dual purpose reactor, generating electricity from its steam by-product in addition to producing plutonium. It is the only plutonium production reactor at Hanford that has operated since 1971. It is currently in standby status.

**National Pollutant Discharge Elimination System (NPDES):** Grants authority to EPA and authorized states to issue permits for discharge of wastewaters into certain surface water bodies within prescribed limits for constituents, concentrations and volumes.

**Percolation:** Gravity flow of water through pore spaces in rock or soil.

**pH:** A measure of acidity or alkalinity. A pH of 7 is neutral, with lower numbers being acidic and higher numbers being alkaline.

## Definition of Other Technical Terms

**Plume:** A defined area of groundwater contamination.

**Plutonium:** A radioactive element used as the primary fuel in nuclear weapons. Plutonium is purified during various production operations at Hanford.

**Point of Compliance:** A RCRA term, the point at which the groundwater protection standard applies and where monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

**Ponds:** Surface impoundments used to contain low-level liquid radioactive wastes, mixed wastes, or hazardous wastes.

**Receptor:** Any living entity potentially affected by release of substances to the environment from Hanford operations.

**Recharge:** The net process of groundwater replenishment by infiltration of surface water through the soil column. Sources of recharge include precipitation and surface runoff from natural and man-made water courses and impoundments.

**Reduction/Oxidation (REDOX):** A facility and/or processes for separating plutonium from irradiated reactor fuels by using successive steps of chemical reduction/oxidation together with solvent extraction.

**Reverse Well:** Liquid waste disposal structure consisting of a well (sometimes drilled into the water table) into which waste solutions were pumped.

**Salt Cake:** Crystallized nitrate and other salts deposited in waste tanks, usually after active measures are taken to remove moisture.

**Sanitary Landfill:** A burial operation for disposing of nonradioactive, nonhazardous waste or garbage.

**Saturated Zone:** The subsurface zone in which all interconnected voids or pores are filled with water.

**Seepage Pond:** An artificial body of surface water formed by discharge from Hanford process operations.

**Stabilization:** Treatment of waste or a waste site to protect the environment from contamination.

**State Waste Discharge Permit:** A permit issued pursuant to Chapter 173-216 WAC.

**Strontium 90:** A highly radioactive isotope common in most radioactive waste streams at Hanford.

## Definition of Other Technical Terms

**Sulfuric Acid:** A highly corrosive inorganic acid used in various production processes at Hanford.

**Surplus Facility:** Any facility or site (including equipment) that has no identified programmatic use and may or may not be radioactively contaminated to levels that require controlled access.

**Synthetic Organic:** Man-made chemical compounds that contain carbon and may be highly persistent in the environment.

**Tank Farm:** An installation of multiple adjacent tanks, usually interconnected, for storage of liquid waste, or substances used in Hanford operations. Major tank farms at Hanford are underground.

**Transuranic (TRU) Waste:** Waste contaminated with long-lived transuranic elements in concentrations within a specified range established by DOE, EPA, and the Nuclear Regulatory Commission (NRC). These are elements shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.

**Trend Analysis:** A statistical methodology used to detect net changes or trends in contaminant levels over time.

**Tritium:** A radioactive isotope of hydrogen used in nuclear weapons to increase the efficiency of the nuclear reaction.

**Tunnel:** A large underground storage structure for large pieces of equipment, often on railroad cars; PUREX storage tunnels.

**Unconfined Aquifer:** An aquifer overlain with permeable material and sensitive to contamination; also, an aquifer that has a water table or surface at atmospheric pressure.

**Vault:** A RCRA approved, subsurface structure designed for permanent disposal of low-level mixed wastes in grout.

**Washington Guidance Level (WGL):** An interim health level for a contaminant which does not have an established criterion but which may create a public health hazard. A WGL is based on less stringent development processes than a criterion and is meant to act as an enforcement guide until a criterion is established. WGL will be based on the most current available data which may include, but not be limited to: (a) USEPA Maximum Contaminant Level Goals, (b) USEPA Priority Pollutant Values, (c) USEPA Ambient Water Quality Criteria, (d) USEPA Health Advisories, (e) Other States criteria or Guidance Levels, and (f) Department of Social and Health Services Health Risk Assessments.

### Definition of Other Technical Terms

**Water Table:** The upper boundary of an unconfined aquifer surface below which soil saturated with groundwater occurs; defined by the levels at which water stands in wells that barely penetrate the aquifer.

**200 Areas Plateau:** The highest portion (aside from Rattlesnake and Gable Mountains) on the Hanford Site, containing most of the waste processing and storage facilities.