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PFP Baseline Control

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**PLUTONIUM FINISHING PLANT
TRANSITION PROJECT MISSION ANALYSIS
REPORT**

September 21, 1994

Prepared for:

**WESTINGHOUSE HANFORD COMPANY
P. O. Box 1970
Richland, Washington 99352**

Prepared by:

PFP Baseline Control

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1.0 INTRODUCTION

1.1 PURPOSE

This report defines the mission for the Plutonium Finishing Plant Transition Project (PFPTP) using a systems engineering approach. This mission analysis will be the basis for the functional analysis which will further define and break down the mission statement into all of the detailed functions required to accomplish the mission. The functional analysis is then used to develop requirements, allocate those requirements to functions, and eventually be used to design the system.

1.2 SCOPE

This report:

- presents the problem which will be addressed
- defines PFP Transition Project
- defines the overall mission statement,
- describes the existing, initial conditions,
- defines the desired, final conditions,
- identifies the mission boundaries and external interfaces,
- identifies the resources required to carry out the mission,
- describes the uncertainties and risks, and
- discusses the measures which will be used to determine success.

1.3 BACKGROUND

The PFPTP includes both the organizational structure, consisting of workers and work control processes, and the physical buildings in the PFP complex. The PFP is located in the 200 West Area of the Hanford Site. It was originally used to perform diversified plutonium processing, storage, and support operations including:

- Plutonium conversion,
- Plutonium recovery and concentration,
- Special Nuclear Material (SNM) handling and storage,
- Radioactive waste handling,
- Laboratory support; and
- Facilities surveillance.

The PFPTP consists of nine major buildings and structures grouped within a double fenced security enclosure. The PFP process and support buildings include the 232-Z, 234-5Z, 236-Z, 241-Z, 242-Z, 243-Z, 291-Z, 2736-Z and the 2736-ZB buildings. Only personnel having duties and responsibilities associated with the operation of the plant and auxiliary facilities have access to the Project. The principal PFP structure, Building 234-5Z, and its main supporting buildings, the 241-Z, and the 291-Z buildings, were completed in 1949 to purify plutonium nitrate solutions, reduce plutonium nitrate to plutonium metal, and fabricate plutonium metal parts. Building 234-5Z houses the plutonium processing operations as well as the major service and support facilities, the PFP Analytical Laboratory, the Plutonium Process Support Laboratories, and the Standards Laboratory. The 241-Z Waste Treatment Facility consists of five separate underground ventilated cells, each containing a 20,000 liter tank used to accumulate liquid wastes generated in the PFP prior to transfer to the Tank Farms. The 291-Z Exhaust Ventilation building provides the exhaust ventilation and other support services, such as instrument air, emergency exhaust steam turbine ventilation and cooling water support to the 234-5Z and 236-Z buildings. Additional requirements for increased production, more storage and for plutonium (Pu) recovery led to the later construction of the Plutonium Reclamation Facility, 236-Z; the Americium-241 Waste Treatment Facility, 242-Z; the Waste Incinerator Facility, 232-Z; and the Shipping and Receiving Complex (2736-Z, 2736-ZA, 2736-ZB and 2721-Z buildings). Refer to WHC-CM-5-8 PFP Administration Manual for a more complete historical background.

The current status of some of the major facilities within the PFPTP can be found in Table 1, and is briefly described here. The Plutonium Reclamation Facility and the Remote Mechanical C-Line are in standby. The Remote Mechanical A-Line, the Americium-241 Waste Treatment Facility, and the old Radioactive Digestion Test Unit (RADTU) are in lay away status. The 232-Z Waste Incinerator building is currently undergoing terminal clean out, which is on schedule for completion by September 30, 1994. The PFP Analytical Laboratory, the Plutonium Process Support Laboratories and the Standards Laboratory are active laboratories supporting ongoing interim actions and other projects at Hanford, such as the Tank Waste Remediation System (TWRS). The Shipping and Receiving Complex, including the 2736-Z vaults and all associated support facilities, such as the 2721-Z diesel generator facility and the 2736-ZA ventilation exhaust building, is active and supports the ongoing storage mission of SNM materials consolidated at PFP. To support the Hanford Tri-Party Agreement a new Low Level Waste Treatment Facility, the 243-Z building, was constructed and became operational on May 27, 1994. This facility, coupled with the new Closed Loop Cooling system, treats and isolates the majority of PFP liquid effluent discharges from the 216-Z-20 crib.

Table 1. Summary PFP Status.

<u>Status</u>	<u>Areas and Activities</u>
<u>Stand by</u>	<ul style="list-style-type: none"> - Plutonium Reclamation Facility - Remote Mechanical C-Line
<u>Lay away</u>	<ul style="list-style-type: none"> - Remote Mechanical A-Line - Americium-241 Waste Treatment Facility - RADTU (Radioactive Digestive Test Unit)
<u>Terminal Clean Out (TCO)</u>	<ul style="list-style-type: none"> - 232-Z Waste Incinerator
<u>Active</u>	<ul style="list-style-type: none"> - PFP Analytical Laboratory - Plutonium Process Support Laboratories - Standards Laboratory - Shipping & Receiving Complex and associated support facilities including SNM storage vaults - Low Level Waste Treatment Facility - 234-5Z Vaults - Sludge Stabilization area - 241-Z, 291-Z and 243-Z buildings

2.0 MISSION ANALYSIS

2.1 PRELIMINARY ACTIONS

2.1.1 Problem Statement

The PFP is no longer used to conduct diversified plutonium processing for the defense programs, but PFP retains Special Nuclear Materials (SNM) from previous activities. Special Nuclear Material contaminants some of the infrastructure, the soil and the immediate environment around the plant. The PFP infrastructure is also beyond its original designed life, is costly to maintain, and contains unconfined SNM which can be hazardous to workers, the environment, and the public. Temporary SNM storage must be provided until alternative interim storage is available or the material is transferred for beneficial use. Beyond the temporary storage of SNM and laboratory support, no future use of the PFP facilities has been confirmed.

2.1.2 PFP Objectives

The following are the PFP Transition Project objectives:

- Ready the PFP Complex to implement the Record of Decision (ROD) from the PFP Clean Out Environmental Impact Statement (EIS);
- Maintain all safety boundary systems consistent with requirements. Also, maintain all balance of plant systems and equipment necessary for facility occupancy while implementing the mission;
- Implement cost-effective, innovative approaches to ensure the required safety boundary is properly defined;
- Maintain compliance with Environmental, Safety and Health codes and standards while continuing to complete scheduled environmental upgrades;
- Involve stakeholders in the development and implementation of Interim Actions, including stabilization;
- Safely stabilize reactive scrap inventories currently held in glove boxes;

- Safely and securely operate the PFP vault complex to receive, store and ship Special Nuclear Material consistent with applicable Federal, State and International regulations and requirements;
- Provide a validated, technical baseline (cost and resource loaded schedule) for the project supporting the Hanford site cleanup mission, including deactivation of project facilities, from which project costs can be monitored and minimized while project milestones are properly managed to completion; and,
- Provide cost effective utilization of the project work force, and all resources, to minimize the need for strategic redeployment or out-placement activities.
- Continue to maintain a laboratory capability sufficient to support the temporary storage of SNM and facility deactivation activities (i.e., sample characterization, etc.).
- Maintain the infrastructure to preclude inadvertent SNM release until the SNM inventory is reduced to acceptable levels.

2.1.3 Source Materials and Documentation

This document results from the efforts of many people, including those working at the PFPTP. PFPTP and WHC Systems Engineering personnel developed and prepared this report. In addition to meetings held to determine the report's contents and form, other sources were utilized and are listed below:

WHC-EP-0722, Rev. 0; January 1994; "System Engineering Functions and Requirements for the Hanford Cleanup Mission: First Issue"; Westinghouse Hanford Company.

WHC-SD-CP-SAR-021, Rev. 0; March 25, 1994; "Plutonium Finishing Plant Final Safety Analysis Report"; Westinghouse Hanford Company.

9453650 ATTACHMENT Draft, May 25, 1994, "Hanford Site Systems Engineering Manual".

WHC-CM-5-8, Rev 63, July 18, 1994; "Plutonium Finishing Plant Administration," Westinghouse Hanford Company.

EM-40, Draft; Decontamination and Decommissioning Guidance Document; USDOE.

2.2 MISSION DEFINITION

This section is divided into five sub-sections. The first defines the Mission Statement for the PFP Transition Project and is compatible with the Hanford Cleanup Mission Statement. The remainder of the report is the detailed description of the Mission Context Diagram, shown in Figure 1. Initial and final conditions are presented in accompanying tables. The initial conditions describe the present condition of the PFP Transition Project including the buildings, vaults, materials, infrastructure, soil, and personnel. The final conditions describe the desired output of this mission.

The next sections describe in detail the rest of Figure 1 including the resources required and the controls acting on the system. In these following sections, the initial and final conditions are analyzed to define the system interfaces, boundaries, and requirements.

2.2.1 Mission Statement

The PFFTP Mission is to prepare the PFFTP to implement the Record of Decision (ROD) resulting from the PFP Clean up Environmental Impact Statement, to provide interim storage for all SNM materials currently at the PFP and to deactivate all portions of the PFP not required for the storage of SNM or to implement the ROD. Facilities will be deactivated in a systematic manner which supports the storage of SNM. Deactivation will support the Hanford Cleanup Mission Statement, summarized below.

- Cleanup the Hanford Site
- Protect the health and safety of the public and the workers
- Protect the environment
- Provide beneficial use of land and resources
- Serve as a DOE model for environmental restoration
- Comply with Tri-Party Agreement
- Comply with applicable Federal, State, International and Local laws
- Include stakeholders in the decision process
- Provide positive, lasting regional economic impact.

The PFFTP Mission Statement and Mission Context Diagram (Figure 1) are consistent with the top level (0 Cleanup Hanford) and the first, second and third level functions (4.0 Remedy Unsafe and Unacceptable Conditions, 4.1 Deactivate Facilities, 4.1.1 Deactivate Facilities with SNM, and 4.7 Store, Treat and Disposition SNM/NM/NF Materials) identified in WHC-EP-0722 "Systems Engineering Functions and Requirements for the Hanford Cleanup Mission: First Issue." Figure 2, "PFP Mission Relationship Between Deactivation and Store, Treat, Disposition SNM," shows the PFFTP mission relationship between the deactivation function and the store, treat and disposition of SNM function.

The PFP TP mission scope includes only the stabilizing and packaging of SNM for temporary storage sufficient to support the deactivation function and does not include the store, treat, disposition SNM/NM/NF materials function. In other words, since the plutonium form required for final plutonium disposition has not yet been identified, it is premature to identify the PFP TP as having a mission that includes the storing and treating of plutonium for final disposition.

Figure 1

Deactivate PFP Complex Mission Context Diagram

Figure 2.

**PFFTP MISSION RELATIONSHIP BETWEEN
DEACTIVATION AND STORE, TREAT, DISPOSITION SNM**

2.2.2 Initial State Conditions

The initial state conditions for the PFPTP are shown in Table 2. These initial conditions establish the current programmatic and physical states of the system on which the mission is to be performed. They are described in terms of the system attributes which will be transformed by performing the mission. Initial state conditions enter from the left as illustrated in Figure 1. References are provided in the table where further information may be found.

2.2.3 Final State Conditions

Final state conditions for the PFPTP are shown in Table 3. These final conditions establish the programmatic and physical end state to be achieved by execution of the mission. The final conditions are described in terms of major topics. These major topics identify significant system characteristics produced by performing the mission. Final state conditions are shown exiting the right side of the mission as illustrated in Figure 1. References are provided in the table where further information may be found.

2.2.4 Mission Boundaries and Interfaces

2.2.4.1 Mission Boundaries. The physical boundary of the PFP is a fence which limits access to authorized personnel only. The PFPTP lies within this fenced area and does not include: the Z-9 Crib, the 216-Z-20 Crib, the 231-Z Building (except for Cells 3-6) and Transfer Lines/Cathodic Protection Systems.

The programmatic boundaries of the PFPTP are not physical. These are the organizational boundaries. Better understanding of these can be made by examining the interfaces where information, material or energy are exchanged. The PFPTP consists of approximately 525 personnel. They are involved in activities to operate the project, to maintain the surveillance and safety, and to transition the project to Environmental Restoration (ER). For example, the PFPTP personnel interface with the following areas and functions:

- site utilities (sewage, steam, water, electricity)
- central security, transportation, janitorial
- fire protection
- 222 Analytical Labs
- Waste Sampling & Characterization Facility (WSCF) Lab.

Table 2. PFP Initial State Conditions.
4 Pages

Topics	Include/Exclude	Initial Condition	References	Working Position
Physical Systems				
Buildings	Include	50+ operational buildings Nine major buildings One abandoned underground tank with approx. 30 Kg Pu Buildings costly to maintain	WHC-SD-CP-SAR-021, Rev. 0, "Plutonium Finishing Plant Final Safety Analysis Report"	236-Z & 234-5Z (excluding vaults) are in standby pending ROD, due FY 95. RADTU, Remote Mechanical A-Line & Americium-241 waste Treatment are in lay away, awaiting funds for TCO; 232-Z is undergoing TCO & is scheduled for completion 9/30/94. D&D to begin in FY 95.
SNM Storage Vaults	Include	Four main vaults, Vaults 1-4 in the 2736-Z building, called the Z- vaults. Eleven additional vaults and vault- type rooms within the 234-5Z building. Rooms 139, 173, 174, 175, 179, 190, 192A, 192B, 192C, 225 and 236. Three vault rooms in 2736-ZB and two vault-type rooms.	WHC-SD-CP-SAR-021, Rev. 0, "Plutonium Finishing Plant Final Safety Analysis Report"	Active

Table 2. PFP Initial State Conditions.
4 Pages

Topics	Include/Exclude	Initial Condition	References	Working Position
Physical Systems				
Materials	Include	<ul style="list-style-type: none"> • ~8,000 plutonium-bearing items in vault storage • ~600+ items in glove boxes and pedestal storage • 25 metric tons of plutonium-bearing materials total • ~450+ containers of liquid $\text{Pu}(\text{NO}_3)_4$ (chemically reactive and corrosive) • Contaminated equipment: <ul style="list-style-type: none"> - 6 Kg plutonium (Pu) in exhaust ventilation ducting - 4.3 Kg Pu in 26" process vacuum piping - ~22Kg Pu on 236Z floor - ~30 kg Pu in abandoned underground tank • Liquid discharges to the 216-Z-20 crib at ~13 gal/min • Significant quantities of asbestos, hazardous chemicals and regulated wastes • Continuing air releases of extremely low-levels of Pu, within EPA guidelines 	<p>WHC-SD-CP-SAR-021, Rev. 0, "Plutonium Finishing Plant Final Safety Analysis Report"</p> <p>WHC-SD-CP-PMP-003, Rev. 0, "Plutonium Finishing Plant Remediation Project Management Plan"</p>	Meet TPA agreement prohibiting liquid discharge.

Table 2. PFP Initial State Conditions.
4 Pages

Topics	Include/Exclude	Initial Condition	References	Working Position
Physical Systems				
		<ul style="list-style-type: none"> • Incoming materials and SNM receipts from the Hanford site and other DOE sites. 		
Utilities & Services	Include	Aging electrical power Aging HVAC Failing septic system Hanford Site water main passes through the PFPTP Steam supplied to PFP and 231-Z Building	WHC-SD-CP-SAR-021, Rev. 0, "Plutonium Finishing Plant Final Safety Analysis Report"	Repair required systems. Downgrade or shutdown systems not needed.
Soil	Exclude	Contaminated and potentially contaminated soil	WHC-SD-CP-SAR-021, Rev. 0, "Plutonium Finishing Plant Final Safety Analysis Report"	Will be handled by ER Contractor.

Table 2. PFP Initial State Conditions.
4 Pages

Topics	Include/Exclude	Initial Condition	References	Working Position
Physical Systems				
Programmatic Systems				
Operational & Support Personnel	Include	PFP Operations/Engineering Staff Analytical Laboratories Pu Process Support Laboratories - support total Hanford Cleanup Mission, basically a resident of PFP Standards Laboratory Safeguards/Security Patrols	Organizational Charts & Personnel	Active.

Table 3. PFP Final State Conditions.

Topic	Final Condition	Working Position
Deactivated Facilities	All building (structures, systems, and components) are deactivated and transferred to ER Contractor.	Facilities will be deactivated in an orderly sequence which supports storage of SNM.
Transitioned Reusable Resources	Vault SNM storage systems, including laboratory, are turned over to appropriate site function. Materials are in a state acceptable for reuse. PFP work force is available for redeployment.	Vaults should be made available for interim storage. Maximize other resources available for reuse and redeployment.
Stabilized Materials	Stabilized Pu materials are transferred to interim storage.	Transfer may be administrative if PFP vaults are allocated to interim storage.
Transferred Waste -liquids -solids -gaseous	Waste resulting from current and future PFP complex operations are transferred to appropriate disposal systems.	

2.2.4.2 Mission Environment. The mission environment is defined as that which exists outside of the PFPTP mission. How this environment is expected to change or remain the same throughout the life of the mission is important in defining the mission. The relevant attributes of the environment are listed below:

- DOE Approach
The DOE is expected to use the Hanford Cleanup as its model for environmental restoration. Therefore, DOE is expected to be closely involved in the process, and the funding is expected to be adequate.
- Public Attitudes
The Public generally mistrusts the DOE and current activities, because of the secrecy associated with past Hanford activities and the technical complexity of the current cleanup activities. This mistrust is expected to be lessened as they become more informed and involved in the decision-making process.
- Management Approach
The management of the Hanford Site Cleanup Mission will be strengthened to supply the policy, procedures, and resources to effectively cleanup Hanford.

2.2.4.3 External Interfaces. These interfaces are those entities through which the mission receives or transfers information, material or energy outside of the defined mission including external requirement sources. The following are interfaces related to the PFP mission:

- Federal Agencies
- State and Local Governments
- Confederated Tribes
- DOE Headquarters and Field Office
- DOE Laboratories
- Government Agencies Sending SNM to PFP
- Other Hanford Programs and Projects
 - Spent Nuclear Fuel Project
 - TWRS Program
 - Solid Waste Program
 - Aqueous Waste Project
 - Site Environmental Monitoring
 - Site Infrastructure

- Environmental Restoration (ER) Contractor
- Stakeholders
- Other facilities in the DOE complex

2.2.4.4 Mission Requirements. Requirements are externally and internally imposed product specifications and process constraints that establish how well and under what conditions the mission must be achieved. Constraints are requirements from which no relief can be sought to implement a selected alternative. Requirements may be derived from laws, directives, policies, standards, agreements with stakeholders, engineering studies, safety analyses and findings from surveillance and audits. Identification and allocation of requirements will occur in the requirements analysis phase of the systems engineering process. Requirements can be classified into two categories: external requirements (imposed by entities external to the system) and mission driven requirements (those which can be deduced from the mission statement).

External requirements are contained in laws, statutes, regulatory documents and agreements applicable to topics and activities encompassed in the mission statement. The following is a partial list of external requirement sources:

- public law
- United States Uniform Building Code
- Federal Register
- Code of Federal Regulations
- Washington Administrative Code
- Revised Code of Washington
- Executive Orders
- Secretary of Energy Notices
- U.S. Department of Energy (DOE) Orders
- DOE Notices, Policies and Guidance
- RL Implementing Procedures and Directives
- Stakeholder values and concerns
- Hanford Federal Facility Agreement and Consent Order (89-10, Rev. 1),
also called the Tri-Party Agreement (TPA)
- TPA Milestone to eliminate liquid discharges by June 1995
- Other Memorandums of Understanding (MOU) and agreements
- National Consensus Codes and Standards
- DOE Environmental Management Policy
- Union Agreement/contract.

Mission driven requirements are derived from analyses of mission needs and parameters (input, physical and chemical system characteristics, required outputs, etc.). Mission driven requirements establish the performance specifications of systems which provide the framework for comparing system alternatives and technological approaches. Examples are:

- Consolidate PFP SNM storage to reduce costs.
- Shut down unnecessary utilities and support services to reduce operating costs.

2.2.5 Mission Resources

Mission resources can be divided into the following categories:

- Financial, budgets
- Personnel, man hours & skill mix
- Available Technology
- Physical structures and equipment

2.3 MISSION EVALUATION

2.3.1 Mission Risks

The PFPTP mission, as defined, is feasible. Both possible and probable alternative solutions, which can accomplish the PFPTP mission, are expected to exist. To the extent the mission is defined here, the technology exists and the operational resources are available to accomplish the mission. As the Functional Requirements Analysis is performed and the mission is further defined, mission feasibility will be explored in more depth. Following the requirements identification and their allocation to system functions; detailed structural, physical, and organizational configurations of alternative solution will be fully developed, evaluated for feasibility, and the preferred alternative selected. The mission risks have been identified as:

- Public and Worker Health and Safety
Public concern will remain high until all safety items have been characterized and mitigated.
- Technology
The risk associated with the availability of technology required to accomplish the PFP mission.

- Programmatic

There is no clear guidance for SNM final disposition.

The PFP Cleanout EIS is being prepared and the ROD will not be completed until fall 1995. The ROD could impact the mission. Out-year funding for this mission remains a concern.

- Mission Environment

If any significant shift occurs in the Mission Environment (Section 2.2.4.2), such as public distrust grows instead of subsides or the funding is not sufficient, the PFPTP Mission could be affected.

2.3.2 Issues

- The duration of the temporary SNM storage period is unknown but is expected to be in excess of 50 years.
- The DOE is in the process of developing guidance for the final disposition of SNM/NM/NF materials. Until this guidance is provided, the final disposition of SNM is undefined. Therefore, the role that the PFPTP may plan in final disposition of SNM cannot be determined at this time.
- For the purposes of this Mission Analysis, the amount of current and future funding was assumed to be adequate to carry out the PFPTP Mission. As the mission is further defined in the Functional and Requirements Analysis, the funding levels will be established.
- The acceptance criteria for transfer of PFP facilities to the ER Contractor are still developing. The determination of responsibilities, the end-point criteria, and the activities to be performed and the interfaces are not clear.
- The PFPTP mission includes the receipt and temporary storage of SNM from other Hanford cleanup mission areas. DOE may direct that the scope be expanded to include SNM receipt from other (off-site) facilities within the DOE complex.
- The role of the PFP laboratories, if any, to support other Hanford site cleanup activities is not yet determined.

2.3.3 Measures of Effectiveness and Success

Measures of effectiveness and success (MOE) are used to determine the progress towards accomplishing the mission of deactivating the PFP. They may also be used to measure the quality of the output and how well the defined objectives were met once the mission is completed. The following is a list of categories of MOE's applicable to PFP:

- Cost is within projected budgets
- Schedule meets published milestones
- Quantity of facilities turned over to ER
- Risk (to public, environment and workers) is mitigated or removed
- Improvement in public involvement and public perceptions
- The number of publications and meetings for the public
- Number of workers reassigned
- Amount of Pu turned over to storage
- Assessed quality of Conduct of Operations & Maintenance

3.0 CONCLUSIONS AND RECOMMENDATIONS

The PFP Mission Analysis has fully met its objectives. A Problem Statement and a Mission Statement have been developed and accepted by the PFFTP and Systems Engineering groups. All of the defining elements effecting the PFFTP Mission have been discussed providing a thorough systems view. The initial state and final state conditions are listed, providing a foundation for future development. Mission boundaries, environment, interfaces, requirements, and resources have been qualitatively defined. The resulting definition has been evaluated to determine the MOE's, define potential risks, determine feasibility, and provide for mission verification. Issues have been identified which require further resolution. The conclusions and recommendations follow:

Conclusions

- The Problem Statement and Mission Statement have been established.
- The PFFTP Mission Analysis provides the basis for the Functional Analysis.
- Risks and issues still exist which may change the PFFTP Mission definition.

Recommendations

- Begin the PFFTP Functional Analysis and Requirements Definition.
- Monitor and provide support to the Pu Disposition EIS process and the PFP Cleanout EIS Process.
- Resolve and obtain better definition of the interface between WHC (deactivate) and the ER Contractor.
- Evaluate the Mission Analysis through the systems engineering process and update as required.

4.0 GLOSSARY

This section contains the definition of words and phrases found in the text of this document.

active	<ul style="list-style-type: none"> - describes the operational status of a process or facility - currently operating or scheduled for operation
deactivate	- conversion of facilities to a state where the buildings, chemical processing systems and infrastructure are ready to be removed and the ground is ready to be decontaminated and restored to an acceptable state
D & D	- decontamination and decommissioning, ready for demolition
demolition	- the process of razing the buildings to the ground level, could include decontamination required once the structure is torn apart
ER	- Environmental Restoration, An activity contracted to the ER Contractor. They will provide some of the D&D and demolition.
infrastructure	- are the physical portions of the facility which are implicit to the function of the activities in the structure, such as the heating ventilation, electricity etc.
interim storage	- storage of stabilized materials until these materials are transferred or dispositioned
lay away	<ul style="list-style-type: none"> - describes the operational status of a process or facility - a laid away process is not operable without major repairs/upgrades. No operations are planned. This category is scheduled for terminal clean-out/decontamination and decommissioning (D&D).
resources	- buildings, equipment, people, materials and chemicals

stabilize	<ul style="list-style-type: none">- treat (chemically or physically) material making it less hazardous
stand by	<ul style="list-style-type: none">- describes the operational status of a process or facility- not currently operating and no future plans for operating, but is operable with appropriate repairs and upgrades
terminal clean out (TCO)	<ul style="list-style-type: none">- describes the operational status of a process or facility- activity which involves removing recoverable Pu. Some equipment will be removed, but most will remain- a step prior to deactivation

5.0 REFERENCES

1. WHC-EP-0722, Rev. 0, January 1994; "System Engineering Functions and Requirements for the Hanford Cleanup Mission: First Issue," Westinghouse Hanford Company.
2. WHC-SD-CP-SAR-021, Rev. 0, March 25, 1994; "Plutonium Finishing Plant Final Safety Analysis Report," Westinghouse Hanford Company.
3. 9453650 ATTACHMENT Draft, May 25, 1994, "Hanford Site Systems Engineering Manual," Westinghouse Hanford Company.
4. WHC-CM-5-8, Rev 63, July 18, 1994; "Plutonium Finishing Plant Administration," Westinghouse Hanford Company.
5. EM-40, Draft; Decontamination and Decommissioning Guidance Document, USDOE.