

Spent Nuclear Fuel Project

Multi-Year Work Plan

WBS #1.4.1

Date Published
March 1997

**Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management**

**Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200**

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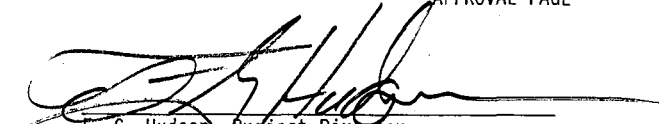
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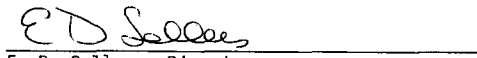
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PURPOSE

The Spent Nuclear Fuel (SNF) Project Multi-Year Work Plan (MYWP) is a controlled living document that contains the current SNF Project Technical, Schedule and Cost Baselines. These baselines reflect the current Project execution strategies and are controlled via the change control process. Other changes to the MYWP document will be controlled using the document control process. These changes will be processed as they are approved to keep the MYWP a living document. The MYWP will be maintained continuously as the project baseline through the life of the project and not revised annually. The MYWP is the one document which summarizes and links these three baselines in one place. Supporting documentation for each baseline referred to herein may be impacted by changes to the MYWP, and must also be revised through change control to maintain consistency.

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1.0 PROJECT TECHNICAL BASELINE

The Hanford Site Technical Baseline (HSTB) was developed to consolidate the technical baselines for all projects across the Hanford Site and reflects the integration of the site-level and project-level baselines. The Spent Nuclear Fuel (SNF) Project technical baseline, as identified in the HSTB, is reproduced in Exhibit 1A, and is contained in Section 1 of this document.

At the Site-level, the data reflects guidance from the Hanford Mission Direction Document (MDD)¹, which identifies safety objectives, interim and final endpoint targets, and performance measures. It is organized by material category and geographic area. The material category of interest to the SNF Project is spent nuclear fuel. The geographic areas of interest to the Project are Reactors on the River, the Central Plateau, and the South 600 Area. Selected interfaces with other Hanford Site projects are also included in Exhibit 1A. Section 3.1 contains the Program Master Baseline Schedule which reflects these site-level interfaces.

From the Project-level, the details of the SNF Project technical baseline are contained in the SNF Project Technical Baseline Description². This document and the supporting information identify the Project-level functions and requirements necessary to accomplish the Project mission. The HSTB data in Exhibit 1A reflects the SNF Project baseline data as well as site-wide baseline data that applies to the SNF Project.

Like the HSTB, the SNF Project technical baseline is composed of the constantly changing technical baselines of its sub-projects. As described in the SNF Project Systems Engineering Management Plan (WHC-SD-SNF-SEMP-001), the technical baseline evolves under tight configuration control from a functional requirements baseline (characterized by a Functional Design Criteria) to an operational baseline (characterized by authorization bases documents). Figure 1-1 depicts the relationship of various technical baselines along with key documents which may contribute to each and how they progressively feed the Project and Site Integrated (technical, cost, and schedule) baselines. A complete listing of document HNF-SD-SNF-PMP-011 is in the Project Management Plan (PMP).

The HSTB database is undergoing a significant revision to reflect the numerous changes that occurred as a result of the transition to the Project Hanford Management Contractor (PHMC). The PHMC has committed to integrating this revision across the Site and projects by July 1997.

¹ DOE/RL-96-14, *Draft Hanford Mission Direction Document*, U.S. Department of Energy, Richland Operations Office, June 1996.

² *Spent Nuclear Fuel Project Technical Baseline Description*, WHC-SD-SNF-SD-005, Revision 1, August 1996.

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The purpose of this technical narrative section is to provide a summary of the SNF Project technical baseline and background information on the data contained in Exhibit 1A.

1.1 Project Summary

The SNF Project was formed in early 1994 to specifically address the urgent need to move metallic uranium fuel from the present degraded storage conditions in the K Basins near the Columbia River to safe interim storage on the Central Plateau until final disposition is decided at the national level.

1.1.1 Project Background. About 80% of the U.S. Department of Energy's (DOE) spent nuclear fuel inventory is located at the Hanford K Basins. Although the basins originally served the K Reactors in the 1950s and 1960s, N Reactor fuel was accumulated from 1978 through 1987. Storage at K Basins was intended to be only as needed to sustain operation of N Reactor while the PUREX Plant was refurbished and restarted. Although much of the N Reactor fuel was processed as planned, the decision in December 1992 to deactivate the PUREX Plant left approximately 2,100 metric tons of N Reactor spent fuel in the K Basins with no means for near-term removal and processing. Fuel stored in the basins exists in a degraded state which continues to further corrode. While fuel in the K-West Basin is contained in lidded canisters, the fuel in K-East Basin remains in open canisters allowing release of fission products to the basin water.

Deficient conditions at the K Basins were identified in a number of internal and external reviews, including November 1993 findings of the DOE Spent Fuel Working Group³. Their report listed K Basins among the few DOE spent nuclear fuel facilities given the highest priority to resolve environmental, health, and safety vulnerabilities.

In May 1994, the Defense Nuclear Facility Safety Board (DNFSB) issued Recommendation 94-1⁴ which identified concerns related to the U.S. DOE's legacy fissile materials remaining from past defense production activities, including spent nuclear fuel stored at the K Basins. The DNFSB expressed concern about the existing storage conditions for these materials and the slow pace at which the conditions were being remediated. The DNFSB made a strong recommendation to accelerate placement of the deteriorating fuel into a stable configuration that would minimize further degradation until a final disposition option is selected.

³ DOE Spent Nuclear Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and the Environmental, Safety, and Health Vulnerabilities, U.S. Department of Energy, November 1993.

⁴ Conway, J.T., DNFSB Recommendation 94-1, letter to H.R. O'Leary, U.S. Department of Energy, May 26, 1994.

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Additionally, negotiations with signatories of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) defined a target milestone to achieve fuel removal by 2002.

In addition to the fuel stored at the K Basins, other spent nuclear fuel stored in the 400 Area Interim Storage Area (ISA); Fast Flux Test Facility (FFTF), T Plant; 324, 325, and 327 Buildings; and the N Reactor Basin will be moved to safe interim storage on the Central Plateau or transported offsite for treatment, consistent with national plans for DOE-owned spent nuclear fuel.

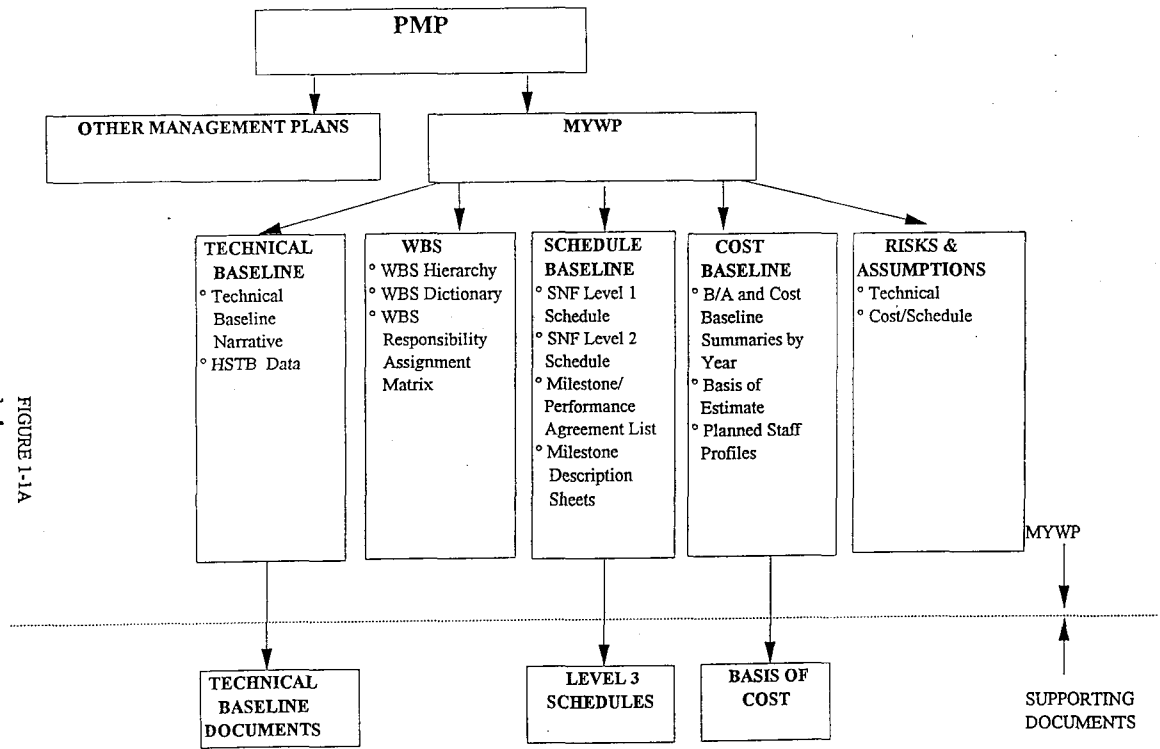


FIGURE 1-1A
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TECHNICAL BASELINE DOCUMENT SUMMARY

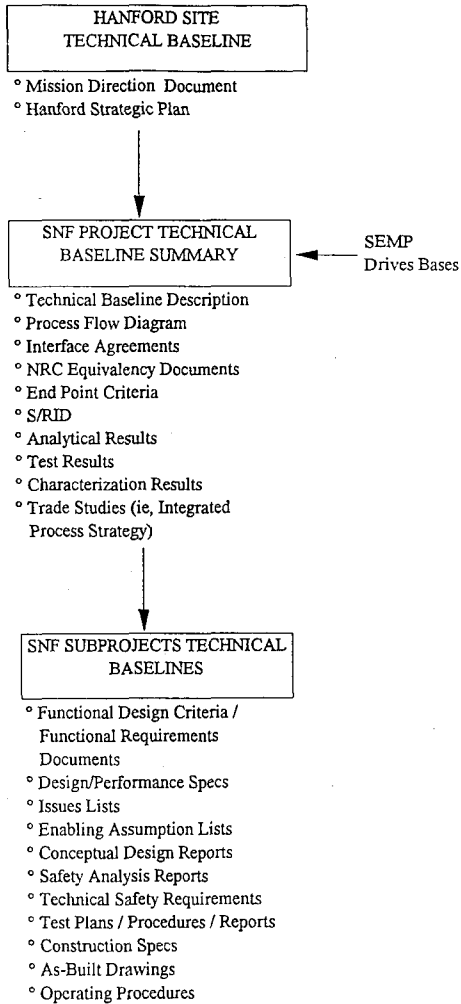


FIGURE 1-1B

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1.1.2 Technical Summary.

The SNF Project process was developed to remove the fuel from existing canisters, repackage in MCOs for cold vacuum drying to remove bulk water from the fuel. MCOs will be transferred to the CSB for staging prior to hot conditioning to enable interim storage in the CSB.

K Basin Operations and Maintenance (WBS 1.4.1.13.01)

Ongoing operations and maintenance assures safe storage of the K Basins SNF until fuel, sludge, and debris removal are complete. K Basins Operations and Maintenance provides for all activities and facilities required to directly support the minimum safe operations of the basins including material and facility surveillance, radiological control, material and waste handling, safeguards and security, maintenance, operation of utility systems, planning/scheduling, engineering, training and assessments. The basin facilities will become the responsibility of Transition Projects at the end of the SNF Project in FY 2001.

Fuel Retrieval (WBS 1.4.1.14.02) and FRS Operations (WBS 1.4.1.13.02)

The fuel retrieval process is located within each Basin pool where fuel elements will be removed from existing canisters and cleaned to remove unbonded sludge and corrosion particles. Fuel elements and fuel scraps will be loaded into separate tier baskets. Loaded tier baskets are transferred to a queue station for lag storage prior to placement in the MCO.

Multi-Canister Overpack (WBS 1.4.1.15.01)

The MCO will provide primary confinement for fuel elements during transport, conditioning, and storage. Each MCO can accommodate a total of five Mark IV fuel baskets or six Mark IA fuel baskets. The current baseline assumes that MCOs will contain no more than one basket loaded with fuel scraps. The MCO lid main seal is mechanically sealed at the K Basins loadout pit prior to transport to Cold Vacuum Drying facility. Pressure relief valves and rupture disks provide overpressure protection.

Cask/Transportation (WBS 1.4.1.15.02)

The cask/transportation system will be utilized to load tier baskets into MCOs and transfer the loaded MCO/cask to the CVD facility and to the CSB. The current baseline assumes that five cask/transporter systems will be sufficient to maintain the processing schedule.

Cold Vacuum Drying (WBS 1.4.1.17.01) and CVD Operations (WBS 1.4.1.13.04)

The CVD facility is located in the 100 K Area to serve both the K East and K West Basins. There, free and some hydrated water will be removed from the MCO under vacuum at slightly elevated temperatures. The project will then transport the water back to the K-Basins for return to the basins via the Integrated Water System. Four processing stations are provided in the CVD. Following the drying process, the MCOs will be sealed and transported to the CSB in the 200 Area for staging.

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Canister Storage Building (WBS 1.4.1.16.01) and CSB Operations (WBS 1.4.1.13.08)

The CSB provides staging capacity for MCOs prior to hot conditioning. On receipt at the CSB service pit, the cask lid will be removed, the MCO vented and purged with inert gas, and then resealed for staging. Throughout the staging period, pressure relief devices provide MCO overpressure protection. The CSB contains three storage vaults and an annex for the Hot Conditioning System. Vault 1 is outfitted with 220 carbon steel storage tubes which can each hold two MCOs. A storage tube plug provides shielding and secondary confinement for the MCO and maintains the inert atmosphere within the storage tube. Vault 1 is sized to accommodate all the MCOs needed for K-Basins SNF. The MCO Handling Machine (MHM) is used to transfer MCOs within the CSB and HCS. Following hot conditioning, a cap with rupture disk will be seal-welded on the MCO, which will be returned to a CSB storage tube for interim storage until final disposition plans are decided at the national level. The CSB is designed for an interim storage period of 40 years, extendable to 75 years with future refits or upgrades. For planning purposes, it is assumed that CSB Operations become the responsibility of Solid Waste Programs at the end of the SNF Project in FY 2001.

Hot Conditioning System (WBS 1.4.1.17.02) and HCS Operations (WBS 1.4.1.13.07)

Six process stations are contained in the Hot Conditioning Annex to the CSB. Hot conditioning will remove hydrated water remaining in the fuel and reduce fuel reactivity. The hot conditioning step, performed by holding the MCO at 300°C under vacuum followed by a partial oxidation step using helium with a maximum 2% oxygen content, is needed to prevent excessive pressure buildup that could be caused by continuing corrosion during interim storage.

Sludge Removal (WBS 1.4.1.14.03) and Sludge Removal Operations (WBS 1.4.1.13.06)

In support of the cleanout of the K Basins, Sludge Removal systems (SRS) are provided to manage the sludge/sediment on the floor and in the pits of the basins and the sludge/sediment in the fuel canisters. The current baseline assumes that K East Basin canister and floor sludge will be accumulated in the basin Weasel Pit for transfer to the Tank Waste Remediation System (TWRS) for management with other tank wastes. The SRS assumes (1) the K West Basin canister sludge will be collected by the Integrated Water System into a retrievable form and (2) the sludge has constituents that make it consistent with K East Basin canister sludge and it will be dispositioned in a similar manner. Because of the relatively small volume, K West Basin floor sludge will remain in the basin.

Debris Removal (WBS 1.4.1.14.04) and Debris Removal Operations (WBS 1.4.1.13.03)

The Debris Removal system is provided to move, clean, and remove empty fuel canisters and other debris within the basins to facilitate fuel and sludge removal. Debris will be disposed of through the Hanford Solid Waste Program.

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Integrated Water System (WBS 1.4.1.14.05) and Water Treatment Operations (WBS 1.4.1.13.05)

The Integrated Water Treatment System (IWTS) provides water filtration and treatment necessary to maintain water quality in the basins. It will upgrade and provide new water treatment systems and facilities for both the KE and KW basins. The IWTS will provide clean, treated, or fresh water and receive and treat contaminated water for the fuel, sludge, and debris removal systems, as well as the MCO/Cask system. The IWTS will provide treatment capability to maintain water clarity, remove decay heat, and maintain soluble and insoluble radionuclide concentrations in the basins as low as reasonably achievable during continued SNF storage and fuel and sludge removal activities. The IWTS will also install a system for canister sludge management during fuel removal. This system will put filter backwash material into the Weasel Pit.

Facility Upgrades (WBS 1.4.1.14.01)

Facility upgrades are performed to repair, replace, and modify essential K Basins infrastructure to maintain safe operations and to facilitate fuel removal from the Basins, including dose reduction and modifications to support the cask/transportation system.

Other Hanford Fuel (WBS 1.4.1.15.03)

Fuel stored in the 400 Area ISA will be moved to the 200 Area for storage or transferred offsite for treatment. Sodium bonded Fast Flux Test Facility (FFTF) fuel will be loaded into shipping casks in the CSB and shipped to Argonne National Laboratory-West for treatment. FFTF fuel that requires additional security measures will be stored in the Plutonium Finishing Plant. Remaining FFTF fuel and other fuel in interim storage casks in the 400 Area ISA will be transferred to the 200 Area ISA adjacent to the CSB. Shippingport PWR Core 2 assemblies stored at T Plant will be retrieved and placed in MCOs for storage inside the CSB.

The SNF Project also has the responsibility for planning for disposition of miscellaneous reactor fuel assemblies located at the PFP and TRIGA Reactor fuel located in the 200 West Area burial ground. If fuel is discovered during cleanout of the N Reactor basin, the SNF Project has the responsibility for its packaging, transport, and storage.

1.1.3 Interface with Hanford Site Mission. The SNF Project mission supports the overall Hanford Site mission by directly supporting Hanford's Mission Execution Priorities as identified in the MDD. The MDD priorities are:

- Essential Safety Operations -- These are operations that must be conducted to protect the health and safety of the public, workers, and environment. Maintaining safe storage of irradiated fuel in the K Basins is identified as an essential safety objective for the Site.
- Mitigate Urgent Risks -- DOE-EM has identified three urgent risks across the complex, all of which are present at Hanford: unstable plutonium, high-level waste tanks, and corroded spent nuclear fuel. Included among essential actions listed in the MDD supporting this priority is moving spent fuel away from the Columbia River.

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- Reduce/Eliminate Costly Mortgages -- This priority addresses deactivation of facilities that require substantial resources for surveillance and maintenance. Movement of other Hanford SNF from current storage locations, such as the FFTF, the N Reactor Basin, and the 300 Area laboratory buildings enables those facilities to be deactivated.
- Stabilize/Contain Wastes -- This priority addresses actions required for waste management that are not addressed in the other priorities.
- Recover Land (and Other Resources) for Beneficial Use -- This priority addresses achievement of land use goals for the major geographic areas of the site. The SNF Project directly supports achievement of the draft land use goal for the Reactors on the River geographic area to "remove or stabilize spent fuel, surplus facilities, and waste sites to protect groundwater and the Columbia River".

1.2 Project End Point Targets

The Project technical objectives include the endpoint targets identified in the MDD for the material category "Spent Fuel" that are applicable to WBS element 1.4.1. The endpoint targets identified in Table 1-1 in Exhibit 1A reflect the stated MDD target of completion of spent fuel removal by 12/31/99 and transfer of the K Basins to Decontamination & Decommissioning (D&D). Since the MDD was prepared, the fuel removal schedule has changed and DOE has determined that the K Basins will be transferred to Transition Projects after completion of the SNF Project mission. Table 1.2-1 below, summarizes the endpoint targets contained in Exhibit 1A and reflects current SNF Project/Transition Projects plans.

Table 1.2-1 Endpoint targets for Material Category "Spent Fuel"

Reactors on the River	Central Plateau	South 600 Area
<p>Spent fuel removed by 7/31/00</p> <p>K-Basins cleaned sufficient to transition to Transition Projects by 9/30/01</p>	<p><i>Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.</i></p>	<p><i>Spent fuels (light water reactor) removed to interim storage in 400 Area pending availability of 200 Area interim storage.</i></p> <p>Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed from 400 interim storage area to 200 Area.</p> <p>Spent fuels (sodium-bonded FFTF) removed off-site for final disposition</p>

Those shown in italics are considered interim targets.

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1.3 Summary-Level Forecasting Data

1.3.1 Waste Type Data. Section 1.3.1 in Exhibit 1A contains the waste (Solid Waste, Tank Waste, Liquid Effluents, and Special Case Waste) inventory and volume projection data. These data are used to track the waste through generation, transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of waste until the turnover of the K Basins to the Transition Projects and the turnover of the Canister Storage Building to the successor operating organization, assumed to be the Solid Waste Program for planning purposes.

The solid waste data were provided from the Solid Waste Information Tracking System (SWITS) database. This database is maintained by the Solid Waste program and receives input from all Hanford Site and offsite waste generators, including the SNF Project. Exhibit 1A identifies projected liquid waste from two sources: (1) water drained from multi-canister overpacks (MCO) during Cold Vacuum Drying (CVD) processing of spent nuclear fuel and (2) water shipped from the K Basins during fuel removal to maintain the required basin levels. Liquid waste volumes may also be affected by tritium-level reduction efforts in the K East basin. Plans to return the water drained from the MCOs in the CVD to the K Basins as well as changes in the time-phasing of waste generation resulting from changes in the SNF processing schedule will be reflected in the July 1997 update of Exhibit 1A.

No data were forecast beyond FY 2001 as planning for activities beyond achieving interim storage is outside the current SNF Project scope. However, Exhibit 1A shows that the SNF Project maintains responsibility for disposition of more than 6,000 cubic meters of low-level liquid waste from FY 2001 through FY 2004. An RL Memorandum of Understanding with the Spent Nuclear Fuel Project, Transition Projects, and Restoration Projects was issued in October 1996 assigning responsibility for disposition of the basin water to the Transition Projects. This change will be reflected in the July 1997 revision of Exhibit 1A.

1.3.2 Nuclear Materials. Section 1.3.2 of Exhibit 1A contains the nuclear materials (Nuclear Fuel) inventory and volume projection data. This data is used to track the nuclear materials through transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of nuclear materials. Nuclear materials data from the SNF Project is derived from three sources:

- Irradiated fuel stored in the K Basins and scheduled to be moved to the Canister Storage Building. It will be transferred to a successor organization at the conclusion of the SNF Project in FY 2001. For planning purposes, this is assumed to be the Solid Waste Program.
- Irradiated fuel stored in Hanford Site locations other than the K Basins. This fuel will be moved to SNF Project operational control within the 200 Area from current storage locations or from the 400 Area Interim Storage Area. It will be transferred to a successor organization at the conclusion

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of the SNF Project in FY 2001 or transferred to the Idaho National Engineering Laboratory for treatment and final disposition (sodium-bonded FFTF fuel only). For planning purposes, the successor organization is assumed to be the Solid Waste Program.

- Sludge (corroded cladding, oxidized fuel, fuel particles, and inorganic and organic debris) within the K Basins which will be assumed to be spent nuclear fuel until time of transfer for disposal; at that time it will be transferred to double-shell tanks or other systems for disposition as waste. The sludge inventory is not reflected in the HSTB database.

No data were forecast beyond FY 2001 because planning for activities beyond achieving interim storage is outside the current SNF Project scope.

1.3.3 Facilities (excess, deactivated). Section 1.3.3 in Exhibit 1A contains a listing of primary structures/facilities within the SNF Project. An MOU between DOE-SFD and DOE-WPD in August 1996 transferred the management responsibility for the 1706 KE/KER/KEL facility to the SNF Project. The list does not reflect future facilities, including Canister Storage Building, and Hot Conditioning System Annex or non-permanent structures such as mobile offices. Future facilities will be included in the facilities listing after completion of construction. SNF Project mobile offices in the 100 K Area are noted below, and are planned for disposition in a FDH inter-program agreement completed in December 1996.

• MO-101	1711K	Document Control
• MO-102	1709K	Ops Analysis & Waste Handling
• MO-214	1701KA	Job Control (ex Patrol Badge House)
• MO-236	1728K	Ops/Hpt Change Trailer (105KW)
• MO-237	1729K	Construction Forces trailer (105KW)
• MO-293	1725K	Projects and Training/Procedures
• MO-382	1721K	Radiological Control
• MO-401	1719K	K Basins Ops/Admin and DOE
• MO-402	1718K	K Basins Engineering
• MO-420	-----	Sample Trailer next to 183KE
• MO-442	1726K	Training Classrooms
• MO-907	1722K	Ops Analysis & Waste Handling
• MO-928	1723K	Design/Drafting
• MO-969	1730K	Ops/Hpt Change Trailer (105KE)

1.3.4 Infrastructure. Section 1.3.4 in Exhibit 1A contains data for Hanford Site Infrastructure planning purposes only. Due to differences in definition of infrastructure type and the financial structure, a direct correlation can not be made between the forecasted usage and budgets within this MYWP.

1.4 Drivers

A number of documents provide the specific strategic, technical, and regulatory direction that govern how the Project mission is executed. These documents serve as the primary source of requirements for the Project.

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Section 1.4.1 and 1.4.2 of Exhibit IA list the key Project drivers and other drivers.

1.4.1 Key project drivers. Key project drivers are those that drive the mission and direction of the Project. These are identified as sources of Mission Requirements in the SNF Project Technical Baseline Description. Key drivers include legal commitments and obligations, NEPA documents, DOE plans, guidance documents, and key directives, letters providing direction to the Project, and other documents that impact workscope or the method in which workscope is performed.

1.4.2 Other drivers. The SNF Project is subject to the full range of applicable local, State and Federal laws and regulations. The administrative and technical requirements contained in the laws and regulations impact the products produced by the SNF Project and subprojects. In addition, the administrative requirements (e.g., permitting) significantly impact the timing and sequencing of planned project activities.

The Code of Federal Regulations (CFR) is the source document for many of the implementing regulations associated with federal law. Permits are issued by the regulatory agencies for specific activities when required by applicable laws and regulations. The permits contain requirements and constraints that directly impact the activities for which they are issued. In addition to the requirement to have a permit, the specific requirements of the permit will impact the project activities.

Washington state publishes legal requirements in the form of the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC). These in turn may be passed on as direction by DOE-RL. The most significant of these are those associated with water and air permitting. Permits are required for anticipated air and liquid effluent emissions.

Standards/Requirements Identification (S/RIDs) is the process of identifying the specific Environmental, Safety, and Health standards/requirements that apply to conducting the day-to-day mission of defense nuclear facilities. The standards/requirements are derived from the following list of potentially applicable documents:

- DOE Orders, Secretary of Energy Notices, Rules, and directives;
- Federal Regulations and Laws;
- National Consensus issuances and industry codes and standards: National Fire Protection Association, American National Standards Institute/American Nuclear Society for Quality Control, Institute of Electronics and Electrical Engineers, International Commission on Radiological Protection, Underwriters Laboratory, Institute of Nuclear Power Operations, Electric Power Research Institute, etc.;
- International guidance: International Atomic Energy Agency, etc.
- Other State and local requirements.

The product of the S/RIDs process, a facility-specific S/RID document is approved by RL. Additional requirements are derived from DOE plans, guidance

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documents and directives, letters providing direction to the Project, company manuals, and other technical and administrative documents.

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1.5 Functional Definitions

In 1994, the Hanford Site Systems Engineering activity developed five major functions that encompass all activities in support of the Site's primary function, "Clean Up Hanford". The SNF Project and other Hanford Site projects, such as the Tank Waste Remediation System and Transition Projects, are responsible for performance of these functions. The SNF Project Systems Engineering activity established its function structure from the Site's by further developing the five functions listed below.

- Function 1.0, Manage SNF Project
- Function 2.0, Acquire Mission Essential Capabilities
- Function 3.0, Obtain Public Involvement
- Function 4.1.1.8, Deactivate K Basin
- Function 4.7.2, Condition, Store, and Disposition SNF Material.

The Site and SNF Project functional structure are shown in Figure 1-2. The HSTB database includes SNF Project functions one level below the intersection with the Site functions identified above. The SNF Project Technical Baseline Description includes those functions as well as any lower-level SNF Project functions that were developed in support of subproject activities.

Table 1.5-1 shows the relationship between the SNF Project systems engineering functions and the SNF Project Work Breakdown Structure. Section 1.5 of Exhibit 1A identifies and defines the SNF Project functions contained in the HSTB database.

Table 1.5-1 SNF Project Function/Work Breakdown Structure Crosswalk

Function #	Function Title	WBS #	WBS Title
1.0	Manage SNF Project	1.4.1.00 1.4.1.12	Project Direction Project Integration
1.1	Integrate SNF Project	1.4.1.00 1.4.1.12	Project Direction Project Integration
1.2	Manage SNF Project Technical Baseline	1.4.1.12	Project Integration
1.3	Provide Support Services	1.4.1.12	Project Integration
1.4	Manage SNF Project Regulatory Compliance	1.4.1.11.00.02	Regulatory Compliance
2.0	Acquire SNF Mission Essential Capabilities	1.4.1.14.01 1.4.1.14.02 1.4.1.14.03 1.4.1.14.04 1.4.1.14.05 1.4.1.15.01 1.4.1.15.02 1.4.1.15.03 1.4.1.16.01 1.4.1.17.01 1.4.1.17.02	Facility Upgrades Fuel Retrieval System Sludge Removal Debris Removal Integrated Water System MCO Cask/Transportation Other Hanford SNF CSB Cold Vacuum Drying Hot Conditioning System
2.1	Formulate Acquisition Strategy	Work completed prior to FY 1997	
2.2	Provide Expertise	1.4.1.12	Project Integration

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Table 1.5-1 SNF Project Function/Work Breakdown Structure Crosswalk (continued)

Function #	Function Title	WBS #	WBS Title
2.3	Provide Technology	Work completed prior to FY 1997	
2.4	Provide Facilities, Equipment, Infrastructure & Supplies	1.4.1.14.01	Facility Upgrades
		1.4.1.14.02	Fuel Retrieval System
		1.4.1.14.03	Sludge Removal
		1.4.1.14.04	Debris Removal
		1.4.1.14.05	Integrated Water System
		1.4.1.15.01	MCO
		1.4.1.15.02	Cask/Transportation
		1.4.1.15.03	Other Hanford SNF
		1.4.1.16.01	CSB
		1.4.1.17.01	Cold Vacuum Drying
1.4.1.17.02	Hot Conditioning System		
2.5	Provide Essential Information	1.4.1.12	Project Integration
		1.4.1.11	Safety & Quality
2.6	Provide Integrated Independent Service	1.4.1.12	Project Integration
3.0	Obtain Public involvement	1.4.1.00	Project Direction
		1.4.1.11	Safety & Quality
3.1	Identify Technical Baseline Decisions	Work completed prior to FY 1997	
3.2	Perform Strategic Analysis & Develop Public Involvement Plan		
3.3	Execute Public Involvement Process		
3.4	Develop Understanding of Public/Project Differences		
3.5	Reconcile Differences		
4.1.1.8	Deactivate K Basins	1.4.1.13	Operations
		1.4.1.14	Facility Projects
4.1.1.8.1	Operate and Maintain K Basins During Deactivation	1.4.1.13.01	K Basin Operations & Maintenance
4.1.1.8.2	Plan K Basins Deactivation	1.4.1.13.01	K Basin Operations & Maintenance
4.1.1.8.3	Disposition K Basins Materials	1.4.1.13	Operations
		1.4.1.14	Facility Projects
4.1.1.8.4	Perform K Basins Deactivation	Outside SNF Project scope	
4.1.1.9	Deactivate Other SNF (400 Area)		
4.1.1.10	Deactivate HCS		
4.1.1.11	Deactivate CSB		
4.1.1.12	Deactivate Other SNF (200 Area)		
4.1.1.13	Deactivate CVD		
4.7.2	Condition, Store, & Disposition SNF Material	1.4.1.13.02	FRS Operations
		1.4.1.13.03	Debris Removal Operations
		1.4.1.13.04	CVD Operations
		1.4.1.13.06	Sludge Removal Operations
		1.4.1.13.07	HCS Operations
		1.4.1.13.08	CSB Operations
4.7.2.1	Operate & Maintain SNF Facilities	1.4.1.11	Safety & Quality
		1.4.1.13.01	K Basins O & M
		1.4.1.13.04	CVD Operations
		1.4.1.13.07	HCS Operations
		1.4.1.13.08	CSB Operations

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Table 1.5-1 SNF Project Function/Work Breakdown Structure Crosswalk (continued)

Function #	Function Title	WBS #	WBS Title
4.7.2.2	Administer Condition, Store, & Disposition Operations	1.4.1.13.01 1.4.1.15.03	K Basins O & M Other Hanford Fuel
4.7.2.3	Stage K Basins SNF	1.4.1.13.08	CSB Operations
4.7.2.4	Perform Hot Conditioning	1.4.1.13.07	HCS Operations
4.7.2.5	Store SNF	1.4.1.13.08 1.4.1.15.03	CSB Operations Other Hanford Fuel
4.7.2.6	Stage SNF for Final Disposition	Outside SNF Project scope	

1.6 Project Life-Cycle Requirements

Requirements define how a function must be performed, describe conditions under which functions are performed, or set limits on functions or products. Requirements are derived from the source documents identified in section 1.4, Project Drivers. The requirements identified in Section 1.6 of Exhibit 1A are those that have been allocated (determined to be applicable) to the functions at which the Project connects with the Site Baseline (the five functions listed in section 1.5).

1.7 Project Issues and Assumptions

A technical issue management system is used to identify, evaluate and resolve issues that encompass multiple subprojects and result in significant potential for baseline changes in the Project. In resolving these SNF Project level issues, the decisions formally became part of the SNF Project's technical baseline.

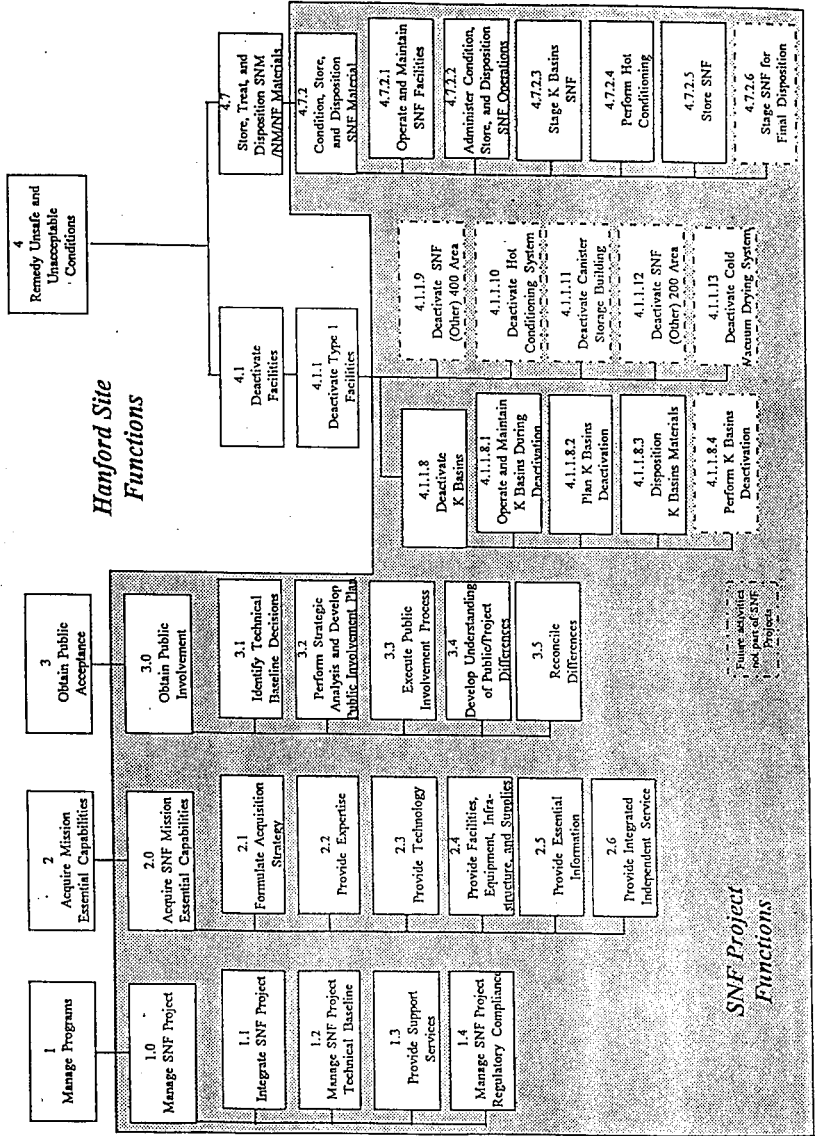
SNF subprojects are required to maintain an issues management process to monitor resolution of issues at the subproject level. Subproject managers are responsible for regularly updating their issues lists. Likewise, subproject managers are responsible for maintaining and validating key enabling assumptions that affect their subproject and impact project design and safety bases.

A listing of all original issues and assumptions developed at the early stages of the SNF Project is retained in the electronic version of the SNF Project technical baseline database for historical records. See section 5.0 for current key Project assumptions.

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Figure 1.2 SNF Project Technical Baseline Functions



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Exhibit 1A

Hanford Site Technical Baseline Data

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1 TECHNICAL BASELINE

The technical baseline describes the work (functions) to be accomplished and the technical standards that govern the work. The following information is provided in this section of the Multi-Year Work Plan (MYWP): Project Mission; Project End Point Targets; Summary-Level Forecasting Data (waste type, nuclear material, facility, infrastructure needs); Drivers (key mission and regulatory); Functional Definitions; Project Life Cycle Requirements; Project Issues and Assumptions.

1.1 PROJECT MISSION

The Spent Nuclear Fuels (SNF) Project supports the Hanford mission to clean up the site by managing and reducing hazards associated with the Hanford spent nuclear fuel inventory, and by managing the effort as a project.

1.2 PROJECT END POINT TARGETS

This section identifies the significant end point targets, technical objectives, and safety objectives to be achieved in accomplishing the project mission. This includes general and specific objectives, deliverables, or activities that are essential to the project mission. This information provides an overview of the activities and deliverables that are contained in the schedule section.

1.2.1 End Point Targets

Table 1.2.1-1 contains the End Point Targets that are established in the Hanford Mission Direction Document (MDD). They provide the basis for the project mission and are implemented through technical requirements contained in the Hanford Site Technical Baseline.

Table 1.2.1-1 End Point Targets

1	<u>MDD, Reactors on the River, Final, 1</u> Spent fuel removed by 12/31/99, K-Basins cleaned sufficient to transition to D&D by 10/31/2000
2	<u>MDD, Central Plateau, Interim, 3</u> Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.
3	<u>MDD, South 600, Final, 4</u> Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed to 200 Area.
4	<u>MDD, South 600, Final, 40</u> Spent fuels (sodium bonded FFTF) removed off-site for final disposition.
5	<u>MDD, South 600, Interim, 59</u> Spent fuels (light water reactor) removed to interim storage in 400 Area pending availability of 200 Area interim storage.

1.2.2 Technical Objectives

Table 1.2.2-1 contains the Technical Objectives that achieve the end point targets. They are established in various Project specific documents and are implemented through technical requirements contained in the Hanford Site Technical Baseline.

Table 1.2.2-1 Technical Objectives

1	SNF Interim Storage To provide safe, economic, and environmentally sound interim storage for all of the Hanford Site's spent nuclear fuel prior to final disposition of the material.
2	SNF Removal To rapidly remove the spent nuclear fuel, debris, and sludge from the K Basins pools and relocate them away from the Columbia River in a configuration that will allow safe, economic, and environmentally sound long term interim storage. For the spent nuclear fuel and potentially, some of the sludge, this is obtained through dry storage. The technical process includes fuel containerization, on-site transportation, temporary staging, conditioning, and dry storage concepts. The debris and remaining sludge will be handled as waste.

1.2.3 Safety Objectives

Table 1.2.3-1 contains the Safety Objectives that are established in the Hanford Mission Direction Document.

Table 1.2.3-1 Safety Objectives

1	MDD, Reactors on the River, Safety Objective S38 Provide surveillance and maintenance of the 1706 KE/KEU/KER Facility.
2	MDD, Reactors on the River, Safety Objective S1 Maintain safe storage of irradiated fuel in K-Basins in accordance with the safety basis for the facility; maintain criticality control, operate corrosion control systems, monitor for fuel and facility deterioration.

1.3 SUMMARY-LEVEL FORECASTING DATA

This section contains forecast information about the project inputs and outputs during the project life cycle. The forecast information is an integral part of the technical basis for the planning, scheduling, and budgeting process.

1.3.1 Waste Type Data (Solid Waste, Tank Waste, Liquid Effluents, Special Case Waste)

Table 1.3.1-1 contains the waste (Solid Waste, Tank Waste, Liquid Effluents, Special Case Waste) inventory and volume projection data. These data are used to track the waste through generation, transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of waste.

Table 1.3.1-1 Waste Volume Inventory
(cubic meters)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Specie' Case Waste
FY 1997														
Begin Inventory														
Received														
Generalad	379.15	1.285	6.48				75.6							
Reduced														
Transferred	379.15	1.285	6.48				75.6							
Disposed														
End Inventory														
FY 1998														
Begin Inventory														
Received														

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIO)	LLMW (LIO)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIO)	Sanitary (SOL)	Asbestos	Special Case Waste
Generated	677.474	1.285	67.42				643.0							
Reduced														
Transferred	677.474	1.285	67.42				643.0							
Disposed														
End Inventory														
FY 1999														
Begin Inventory														
Received														
Generated	639.514	1.285	3.24				681.0							
Reduced														
Transferred	639.514	1.285	3.24				681.0							
Disposed														
End Inventory														
FY 2000														
Begin Inventory														
Received														
Generated	294.098	1.285				927.4	151.2							
Reduced														
Transferred	294.098	1.285				927.4	151.2							
Disposed														
End Inventory														
FY 2001														
Begin Inventory														
Received														
Generated						397.4	95.0							
Reduced														
Transferred						397.4	95.0							
Disposed														
End Inventory														
FY 2002														
Begin Inventory														
Received														
Generated							2271.0							
Reduced														
Transferred							2271.0							
Disposed														
End Inventory														
FY 2003														
Begin Inventory														
Received														
Generated							2271.0							
Reduced														
Transferred							2271.0							
Disposed														
End Inventory														
FY 2004														
Begin Inventory														
Received														
Generated							4542.0							
Reduced														
Transferred							4542.0							
Disposed														
End Inventory														

1.3.2 Nuclear Materials (Special Nuclear Materials, Nuclear Fuel, Cesium capsules, Strontium capsules)

Table 1.3.2-1 contains the nuclear materials (Special Nuclear Materials, Nuclear Fuel, Cesium capsules, Strontium capsules) inventory and projection data. These data are used to track the nuclear materials through transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of nuclear materials.

Table 1.3.2-1 Nuclear Materials Inventory

	Pu/HEU (Kg)	Irradiated Fuel (MTHM)	Cs Capsules (Number of capsules)	Sr Capsules (Number of capsules)	Unirradiated Uranium (MT-U)
FY 1997					
Begin Inventory		2103.0			
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory		2103.0			
FY 1998					
Begin Inventory		2103.0			
Received					
Generated					
Reduced					
Transferred		900.0			
Disposed					
End Inventory		1203.0			
FY 1999					
Begin Inventory		1203.0			
Received					
Generated					
Reduced					
Transferred		1080.0			
Disposed					
End Inventory		123.0			
FY 2000					
Begin Inventory		123.0			
Received		7.49			
Generated					
Reduced					
Transferred		120.0			
Disposed					
End Inventory		10.49			
FY 2001					
Begin Inventory		10.49			
Received		21.0			
Generated					
Reduced					
Transferred					
Disposed					
End Inventory		31.5			

1.3.3 Facilities (Excess, Deactivated)

Table 1.3.3-1 contains the facility forecasting data (facility deactivation, decontamination and decommissioning, and closure). The facility data are used to track the facility through acquisition, operations and maintenance, and disposal. The Project schedule and budget reflect the plans for disposition of excess and deactivated facilities.

Table 1.3.3-1 Facility Inventory

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
FFTF	432A	ISA COVERED EQUIPMENT STORAGE		Advanced Reactors	Spent Nuclear Fuel		
FFTF	471B	INTERIM STORAGE AREA		Advanced Reactors	Spent Nuclear Fuel		
ERC SNF	105KE	Reactor Building FUEL STORAGE BASIN		Spent Nuclear Fuel		Environmental Restoration	Environmental Restoration
ERC SNF	105KW	Reactor Building FUEL STORAGE BASIN		Spent Nuclear Fuel		Environmental Restoration	Environmental Restoration
SNF	119KE	119-KE EXHAUST AIR SAMPLING BLDG		Spent Nuclear Fuel		Environmental Restoration	
SNF	1614KE	ENVIRONMENTAL MONITORING STATION		Spent Nuclear Fuel		Environmental Restoration	
SNF	165KE	KE Power Control Building		Spent Nuclear Fuel		Environmental Restoration	
SNF	166AKE	Oil Storage Facility		Spent Nuclear Fuel		Environmental Restoration	
SNF	1705KE	EFFLUENT WATER TREATMENT PILOT PLANT		Spent Nuclear Fuel		Environmental Restoration	
SNF	1713KE	SHOP BUILDING		Spent Nuclear Fuel		Environmental Restoration	
SNF	1713KW	WAREHOUSE		Spent Nuclear Fuel		Environmental Restoration	
SNF	1714KE	OIL AND PAINT STORAGE SHED		Spent Nuclear Fuel		Environmental Restoration	
SNF	1714KW	KW Warehouse		Spent Nuclear Fuel		Environmental Restoration	
SNF	1717K	MAINTENANCE TRANSPORTATION SHOP BU		Spent Nuclear Fuel		Environmental Restoration	
SNF	181KE	RIVER PUMP HOUSE		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-1KE	HEADHOUSE/CHLORINE		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-1KW	CHLORINE VAULT		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-2KE	KE Sedimentation Basins		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-3KE	KE Filter Basin		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-4KE	KE Reservoir & Clearwells		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-5KE	LIME FEEDER BUILDING		Spent Nuclear Fuel		Environmental Restoration	
SNF	183-6KE	LIME FEEDER BUILDING		Spent Nuclear Fuel		Environmental Restoration	
SNF	183KE	FILTER PLANT HEAD HOUSE, CHLORINE		Spent Nuclear Fuel		Environmental Restoration	
SNF	1908K	OUTFALL		Spent Nuclear Fuel		Environmental Restoration	
SNF	1908KE	EFFLUENT WATER MONITORING STATION		Spent Nuclear Fuel		Environmental Restoration	
SNF	190KE	MAIN PUMP HOUSE		Spent Nuclear Fuel		Environmental Restoration	

1.3.4 Infrastructure (Power, Steam, Water, Roads, Railroad, Sanitary Waste)

This section contains the forecasting data for infrastructure support. These data are used to ensure the required infrastructure is available when it is needed. Table 1.3.4-1 provides the nominal, best estimate of infrastructure needs. Table 1.3.4-2 provides an estimate of the maximum probable need. The Project schedule and budget reflect the services (infrastructure) that are necessary to achieve the project mission.

Table 1.3.4-1 Infrastructure Requirements - Average Demand

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Allocated Land											
Analytical Laboratory Services	350.0	6700.0	6700.0	6700.0	6700.0						SAMPLES/YR
Bioassay and Dosimetry Services	1500.0	1900.0	1900.0	1900.0	1600.0						SAMPLES/YR
Biological Laboratory Services	493.0	493.0	493.0	493.0	493.0						SAMPLES/YR
Building Maintenance	14400.0	7200.0	0.0	0.0	0.0						SO. FT.
Clean Laundry	874000.0	874000.0	874000.0	874000.0	874000.0						LBS/YR
Custodial Services	22000.0	22000.0	26000.0	26000.0	26000.0						SO. FT.
Data (HLAN) Transmission	365.0	365.0	365.0	365.0	365.0						NO. OF PCs
Development Laboratory Services											
Electricity	14.0	24.0	34.0	29.0	29.0						MW-HR/YR
Energy Management Services	0.0	0.0	0.0	0.0	0.0						PROJECTS/YR
Environmental Molecular Science Lab Services	0.0	0.0	0.0	0.0	0.0						SYR
Fab Shop Services	1000.0	250.0	100.0	100.0	100.0						LABOR-HR/YR
Guaranteed Ride Home	20.0	50.0	50.0	50.0	50.0						PASSENGERS/YR
Hanford Road Sys. Heavy Traffic	50.0	340.0	340.0	70.0	10.0						TRUCK LOADS/YR
Heavy Equipment	0.0	0.0	0.0	0.0	0.0						EQUIP-DAYS/YR
Heavy Trucks	500.0	340.0	340.0	340.0	340.0						VEHICLE-HR/YR
In-Field Laboratory Services	6.0	6.0	6.0	6.0	6.0						SAMPLES/YR
Industrial Hygiene Services											
Lifting (Cranes)	60.0	60.0	60.0	60.0	60.0						CRANE DAYS/YR
Non-rad Standards (Calibrators)											
Office Space (Leased)	0.0	0.0	0.0	0.0	0.0						SO. FT.
Office Space (Infrastructure Owned)	14400.0	7200.0	0.0	0.0	0.0						SO. FT.
Office Space (Program Owned)											
Paper Service	322.0	322.0	322.0	322.0	312.0						NO. OF PAGERS
Potable Water	0.7	0.7	0.7	0.7	0.7						MGAL/YR
Radioactive Standards (Calibrators)	300.0	1300.0	1300.0	1300.0	850.0						CALIBRATIONS/YR
Rail Transportation											
Raw Water	0.0	0.0	0.0	0.0	0.0						M3AL/YR
Sedans/Light Trucks	31.0	37.0	32.0	21.0	21.0						NO. OF VEHICLES
Steam	0.0	0.0	0.0	0.0	0.0						LBS/YR
Storage Space (Infrastructure Owned)	0.0	10000.0	10000.0	0.0	0.0						SO. FT.
Storage Space (Leased)	0.0	0.0	0.0	0.0	0.0						SO. FT.
Storage Space (Program Owned)											
Taxi Service	600.0	600.0	600.0	600.0	600.0						PASSENGERS/YR
Video Communication	60.0	60.0	60.0	60.0	60.0						HR/YR
Voice (Telephone) Communication	430.0	430.0	430.0	430.0	430.0						NO. OF PHONES

Table 1.3.4-2 Infrastructure Requirements - Peak Demand

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Allocated Land											
Analytical Laboratory Services	350.0	6700.0	6700.0	6700.0	6700.0						SAMPLES/YR
Bioassay and Dosimetry Services	1500.0	1900.0	1900.0	1900.0	1600.0						SAMPLES/YR
Biological Laboratory Services	493.0	493.0	493.0	493.0	493.0						SAMPLES/YR
Building Maintenance	14400.0	7200.0	0.0	0.0	0.0						SO. FT.
Clean Laundry	874000.0	874000.0	874000.0	874000.0	874000.0						LBS/YR
Custodial Services	23000.0	22000.0	26000.0	26000.0	26000.0						SO. FT.
Data (HLAN) Transmission	365.0	365.0	365.0	365.0	365.0						NO. OF PCs
Development Laboratory Services											
Electricity	0.0	0.0	0.0	0.0	0.0						MW-HR/YR

Table 1.3.4-2 Infrastructure Requirements - Peak Demand (Continued)

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Energy Management Services	0.0	0.0	0.0	0.0	0.0						PROJECTS/YR
Environmental Molecular Science Lab Services	0.0	0.0	0.0	0.0	0.0						SYR
Fab Shop Services	0.0	0.0	0.0	0.0	0.0						LABOR-HR/YR
Guaranteed Ride Home	0.0	0.0	0.0	0.0	0.0						PASSENGERS/YR
Hanford Road Sys. Heavy Traffic	50.0	340.0	340.0	70.0	10.0						TRUCK LOADS/YR
Heavy Equipment	0.0	0.0	0.0	0.0	0.0						EQUIP-DAYS/YR
Heavy Trucks	8760.0	8760.0	8760.0	8760.0	8760.0						VEHICLE-HR/YR
In-Field Laboratory Services	6.0	6.0	6.0	6.0	6.0						SAMPLES/YR
Industrial Hygiene Services											
Lifting (Cranes)	60.0	60.0	60.0	60.0	60.0						CRANE DAYS/YR
Non-rad Standards (Calibrations)											
Office Space (Leased)	0.0	0.0	0.0	0.0	0.0						SQ. FT.
Office Space (Infrastructure Owned)	14400.0	7200.0	0.0	0.0	0.0						SQ. FT.
Office Space (Program Owned)											
Pager Service	322.0	322.0	322.0	322.0	312.0						NO. OF PAGERS
Potable Water	0.0	0.0	0.0	0.0	0.0						MGAL/YR
Radioactive Standards (Calibrations)	800.0	1300.0	1300.0	1300.0	650.0						CALIBRATIONS/YR
Rail Transportation											
Raw Water	0.0	0.0	0.0	0.0	0.0						MGAL/YR
Sedans/Light Trucks	31.0	37.0	32.0	21.0	21.0						NO. OF VEHICLES
Steam	0.0	0.0	0.0	0.0	0.0						LBS/YR
Storage Space (Infrastructure Owned)	0.0	10000.0	10000.0	0.0	0.0						SQ. FT.
Storage Space (Leased)	0.0	0.0	0.0	0.0	0.0						SQ. FT.
Storage Space (Program Owned)											
Taxi Service	0.0	0.0	0.0	0.0	0.0						PASSENGERS/YR
Video Communication	60.0	60.0	60.0	60.0	60.0						HR/YR
Voice (Telephone) Communication	350.0	430.0	430.0	430.0	430.0						NO. OF PHONES

1.4 DRIVERS

This section identifies the documents that are sources of project requirements, including Key and Regulatory Drivers.

1.4.1 Key Drivers

Table 1.4.1-1 lists the source documents that tend to drive the project mission (e.g. Mission Direction Document, Tri-Party Agreement).

Table 1.4.1-1 Key Drivers

Name	Title
B/HI Letter 0162-15	Memorandum of Understanding for Safeguards and Security of Nuclear Material at N Reactor, June 15, 1995
ONFSB 94-1	Defense Nuclear Facilities Safety Board Recommendation 94-1
DOE Letter 95-AMW-003	Approval of Spent Nuclear Fuel (SNF) Path Forward Recommendation, February 14, 1995
DOE Letter 95-NMD-071	Approval of K Basins Sludge Disposition Strategy, June 13, 1995
DOE Letter 95-NMD-090	Canister Storage Building (CSB) Design Life Extension, June 19, 1995
DOE Letter 95-SFO-098	Office of Civilian Radioactive Waste Management (OCRW), "Quality Assurance Requirements and Description (QARD) [RW-033P]", July 12, 1995

Table 1.4.1-1 Key Drivers (Continued)

Name	Title
DOE Letter 95-SFD-113	Spent Nuclear Fuel (SNF) Multiple Canister Overpack (MCO) Conformance to National Multi-Purpose Canister (MPC) Subsystem, July 17, 1995
DOE Letter 95-SFD-132	Approval of Spent Nuclear Fuel (SNF) Path Forward Recommendation, July 31, 1995
DOE Letter 95-SFD-167	Implementation of the K Basins Spent Nuclear Fuel Project (SNFP) Regulatory Policy, September 12, 1995
DOE Owned Spent Nuclear Fuel Strategic Plan	DOE Owned Spent Nuclear Fuel Strategic Plan, U.S. Department of Energy Office of Environmental Restoration and Waste Management (EM-37), December 1994
DOE/RL-93-102	Fiscal Year 1995 Hanford Mission Plan Volume 1, Site Guidance
DOE/RL-96-14	Updated Draft Mission Direction Document, June 1996
SNF-RD-PM-001 Rev 0	Spent Nuclear Fuel Program Requirements Document, Revision 0
Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order: 89-10, Rev. 1
WHC-SP-1144	Spent Nuclear Fuel Project K Basins Path Forward Acquisition Strategy, Rev. F, Draft, December 1994

1.4.2 Other Drivers

Table 1.4.2-1 contains the source documents that must be followed as the project mission is accomplished.

Table 1.4.2-2 Other Drivers

Name	Title
10 CFR 1017	Identification and Protection of Unclassified Controlled Nuclear Information
10 CFR 1021	NEPA Implementing Procedures
10 CFR 1022	Compliance with Floodplain/Wetlands Environmental Review Requirements
10 CFR 20	Standards for Protection Against Radiation
10 CFR 435	Energy Conservation Voluntary Performance Standards for New Buildings; Mandatory for Federal Buildings
10 CFR 435	Federal Energy Management and Planning Programs; Life-Cycle Cost Methodology and Procedures
10 CFR 50	Domestic Licensing of Production and Utilization Facilities
10 CFR 71	Packaging and Transportation of Radioactive Material
10 CFR 71.55	Packaging and Transportation of Radioactive Material: General Requirements for Fissile Material Packages
10 CFR 72	Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste
10 CFR 830	Nuclear Safety Management, 4/5/94
10 CFR 830.120	Quality Assurance Requirements
10 CFR 835	Occupational Radiation Protection
16 U.S.C. 470aa-47011	Conservation; Archaeological Resources Act
16 U.S.C. Section 1531	Conservation; Congressional Findings and Declaration of Purposes and Policy
16 U.S.C. Section 469	Conservation; Preservation of historical and Archeological Data Threatened by Dam Construction or Alterations of Terrain
16 USC 651 et seq	Protection and Conservation of Wildlife
25 USC 3001 et seq	Native American Graves Protection and Repatriation Act
29 CFR 1504	Recording and Reporting Occupational Injuries and Illness
29 CFR 1910	Occupational Safety and Health Standards

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
29 CFR 1926	Safety and Health Regulations During Construction
29 USC 651 et seq	Occupational Safety and Health
33 CFR 153	Control of Pollution by Oil and Hazardous Substances, Discharge Removal
33 CFR 322 Section 10	Permits for Structures or Work in or Affecting Navigable Waters of the United States
33 CFR 325	Processing of Department of the Army Permits
33 USC 1251 et seq	Water Pollution and Prevention Controls; Congressional Declaration of Goals and Policy
40 CFR 110	Discharge of Oil
40 CFR 116	Designation of Hazardous Substances
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System Permits
40 CFR 129	Toxic Pollutant Effluent Standards
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 144	Underground Injection Control Program
40 CFR 146	Underground Injection Control Program: Criteria and Standards
40 CFR 148	Hazardous Waste Injection Restriction
40 CFR 1500 through 1508	Council on Environmental Quality, NEPA, EIS
40 CFR 191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes
40 CFR 241	Guidelines for the Land Disposal of Solid Waste
40 CFR 244	Solid Waste Management Guidelines for Beverage Containers
40 CFR 247	Guidelines for Procurement of Products that Contain Recycled Materials
40 CFR 248	Guideline for Federal Procurement of Building Products Containing Recovered Materials
40 CFR 249	Guideline for Federal Procurement of Cement and Concrete Containing Fly Ash
40 CFR 250	Guideline for Federal Procurement of Paper and Paper Products Containing Recovered Materials
40 CFR 252	Guideline for Federal Procurement of Lubricating Oils Containing Refined Oil
40 CFR 253	Guideline for Federal Procurement of Retread Tires
40 CFR 257	Criteria for Classification of Solid Waste Disposal Facilities and Practices
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administered permit Programs: The Hazardous Waste Permit Program
40 CFR 273	Standards for Universal Waste Management
40 CFR 279	Standards for the Management of Used Oil
40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
40 CFR 370	Hazardous Chemical Reporting: Community Right-to-Know
40 CFR 372	Toxic Chemical Release Reporting: Community Right-to-Know
40 CFR 52	Approval and Promulgation of Implementation Plans

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61	National Emissions Standards for Hazardous Air Pollutants
40 CFR 66	Assessment and Collection of Noncompliance Penalties by EPA
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 70	State Operating Permit Programs
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 82	Protection of Stratospheric Ozone
42 USC 10101, et seq.	Nuclear Waste Policy Act
42 USC 13105	Source reduction and recycling data collection
42 USC 2011, et seq.	
42 USC 4321 et seq.	The Public Health and Welfare; Congressional Declaration of Purpose
42 USC 6901, et seq.	Resource Conservation and Recovery Act of 1976 (RCRA)
42 USC 6924	Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
42 USC 7401 et seq.	The Public Health and Welfare; Congressional Findings and Declaration of Purpose
42 USC 7671	Clean Air Act
42 USC 9501 et seq.	The Public Health and Welfare; Hazardous Substances Releases, Liability, Compensation Definitions
43 CFR 7	Protection of Archaeological Resources: Uniform Regulations
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers, General Requirements for Shipments and Packagings
49 CFR 175	Carriage by Aircraft
49 CFR 176	Carriage by Vessel
49 CFR 178	Specifications for Packagings
49 CFR 393	Parts and Accessories Necessary for Safe Operation
49 CFR 397	Transportation of Hazardous Materials: Driving and Parking Rules
49 CFR 571	Federal Motor Vehicle Safety Standards
49 USC 5101	Transportation of Hazardous Material
50 CFR 17	Endangered and Threatened Wildlife and Plants
50 CFR 402	Interagency Cooperation - Endangered Species Act
94-FDB-015	Agreement Relating to Removal and Encapsulation of Asbestos Material
95-SFD-191	Review of "DOE Spent Nuclear Fuel Requirements Report (DI: A00000000-00811-1708-0000 Rev. 0)" dated June 6, 1995
A Reassessment of Hanford Strategic Thinking	A Reassessment of Hanford Strategic Thinking, Discussion Materials, Draft, Rev. 2, September 1995
ANS8.7/ANSI-N16.5	Guide for Nuclear Criticality Safety in the Storage of Fissile Materials
ANSI Z88.2-1992	American National Standard for Respiratory Protection, 8/6/92
ANS/ANS-8.1	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors
ANS/ANS-8.19-84	Administrative Practices for Nuclear Criticality Safety
BCCAA-REG1	Regulation 1 of the Benton County Clean Air Authority

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
DE-91NM-177	Consent Order: In the Matter of the Compliance by USDOE with Chapter 70.105 and 90.48 RCW and the Rules and Regulations of the Department of Ecology
DNFSB 92-7	Defense Nuclear Facilities Safety Board Recommendation 92-7, Training and Qualification
DOE 4300.2C	Work for Others (Non-Department of Energy Funded Work)
DOE Document, Plan of Action	Plan of Action to Resolve Spent Nuclear Fuel Vulnerabilities Phase III, October 1994
DOE Letter 95-SFD-166	Choice of Roadway as the Transportation Mode for the U. S. Department of Energy, Richland Operations Office K Basin Spent Nuclear Fuel, September 21, 1995
DOE Letter 95-SFD-218	U.S. Department of Energy/U.S. Department of the Navy/State of Idaho Court Agreement
DOE Letter 95-SFD-220	Approval of Changes to the Operational Safety Requirements (OSR) for the K Basins, December 6, 1995
DOE Letter 96-SFD-064	Record of Decision (ROD) for the Final Environmental Impact Statement (FEIS) on the Management of Spent Nuclear Fuel (SNF) from the K Basins at the Hanford Site, Richland, Washington, (DOE/EIS-0245), March 4, 1996
DOE M 471.2-1	Manual for Classified Matter Protection and Control
DOE Memo 96-SFD-104	Memorandum of Agreement (MOA) - Utilization of Canister Storage Building (CSB) Vaults 2 and 3 for Immobilized High-level Waste, April 18, 1996
DOE Notice 4700.5	Project Control System Guidelines
DOE Notice 5400.9	Sealed Radioactive Source Accountability
DOE O 130.1	Budget Formulation Process
DOE O 470.1	Safeguards and Security Program
DOE O 471.2	Information Security Program
DOE O 534.1	Accounting
DOE Order 1240.2B	Unclassified and Assignments by Foreign Nationals, 8/21/92
DOE Order 1300.2A	Department of Energy Technical Standards Program
DOE Order 1324.2A	Records Disposition, 4/9/92
DOE Order 1324.3	Files Management
DOE Order 1324.5A	Records Management Program
DOE Order 1324.5	Automated Office Electronic Recordkeeping
DOE Order 1330.1D	Computer Software Management
DOE Order 1540.1A	Materials Transportation and Traffic Management, 1992
DOE Order 1540.2	Hazardous Material Packaging for Transport - Administrative Procedures, Change 1, 1988
DOE Order 4330.4B	Maintenance Management Program
DOE Order 4700.1	Project Management System
DOE Order 5000.3B, Change 1	Occurrence Reporting and Processing of Operations Information
DOE Order 5300.1C	Telecommunications
DOE Order 5400.1	General Environmental Protection Program
DOE Order 5400.5	Radiation Protection of the Public and the Environment
DOE Order 5480.10	Contractor Industrial Hygiene Program
DOE Order 5480.11	Radiation Protection for Occupational Workers
DOE Order 5480.19	Conduct of Operations Requirements for DOE Facilities
DOE Order 5480.20A	Personnel Selection, Qualification, Training, and Staffing at DOE Reactor and Non-Reactor Nuclear Facilities

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
DOE Order 5480.21	Unreviewed Safety Questions
DOE Order 5480.22	Technical Safety Requirements
DOE Order 5480.23	Nuclear Safety Analysis Report
DOE Order 5480.24	Nuclear Criticality Safety
DOE Order 5480.26	Trending and Analysis of Operations Information Using Performance Indicators
DOE Order 5480.28	Natural Phenomena Hazards Mitigation
DOE Order 5480.29	Employee Concerns Management System
DOE Order 5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Waste, 1985
DOE Order 5480.31	Startup and Restart of Nuclear Facilities
DOE Order 5480.4	Environmental Protection, Safety and Health Protection
DOE Order 5480.7A	Fire Protection
DOE Order 5480.8A	Contractor Occupational Medical Program, 6/26/92
DOE Order 5480.9A	Construction Project Safety and Health Management
DOE Order 5482.1B	Environment, Safety and Health Appraisal Program
DOE Order 5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities
DOE Order 5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements
DOE Order 5500.1B	Emergency Management System
DOE Order 5500.2B	Emergency Categories, Classes, and Notification and Reporting Requirements, 4/30/91
DOE Order 5500.3A	Planning and Preparedness for Operational Emergencies
DOE Order 5630.11B	Safeguards and Security Program, 8/2/94
DOE Order 5630.15	Safeguards and Security Training Program
DOE Order 5631.1C	Safeguards and Security Awareness Program, 5/4/94
DOE Order 5631.2C	Personnel Security Program, 2/17/94
DOE Order 5631.4A	Control of Classified Visits, 7/8/92
DOE Order 5632.1C	Protection and Control of Safeguards and Security Interests, 7/15/94
DOE Order 5633.3B	Control and Accountability of Nuclear Materials, 2/12/93
DOE Order 5639.3	Violation of Laws, Losses, and Incidents of Security Concern, 8/15/92
DOE Order 5650.2B	Identification of Classified Information
DOE Order 5700.2D	Cost Estimating, Analysis, and Standardization
DOE Order 5700.6C	Quality Assurance, 8/21/91
DOE Order 5820.2A	Radioactive Waste Management
DOE Order 6430.1A	General Design Criteria
DOE-M 5632.1C-1	Manual for Protection and Control of Safeguards and Security Interests
DOE-RL 5480.1A	Environmental, Safety, and Health Program for Richland Operations
DOE-RL-92-36	Hanford Site Hoisting and Rigging Manual
DOE-RL-94-02	Hanford Emergency Response Plan
DOE-STD-1020-94	Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities
DOE-STD-1021-93	Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components
DOE-STD-1022-94	Natural Phenomena Hazards Site Characterization Criteria
DOE-STD-1023-95	Natural Phenomena Hazards Assessment Criteria

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
DOE-STD-1073-93	DOE Standard Guide for Operational Configuration Management Program
DOE/EH-0173T	Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance
DOE/EH0135	Performance Objectives and Criteria for Technical Safety Appraisals at Department of Energy Facilities and Sites
DOE/EH0256T(940431)	U.S. Department of Energy Radiological Control Manual
DOE/EP-0108	Standard for Fire Protection of DOE Electronic Computer/Data Processing Systems
DOE/EV-0043	Standard on Fire Protection for Portable Structures
DOE/Navy/State of Idaho Consent Order/Settlement A	DOE/Navy/State of Idaho Consent Order/Settlement Agreement on Spent Fuel and Nuclear Waste, October 18, 1995
DOE/SNF/PP-001	DOE-Owned Spent Nuclear Fuel Program Plan
Federal Register/Vol. 60, No. 105	Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs- Record of Decision
FF-01	FF-01 Permit for Radioactive Airborne Emission Sources
FFCA for HESHAP (2/7/94)	The National Emission Standards for Hazardous Air Pollutants: Federal Facility Compliance Agreement for the Hanford Site
GC-LOAD-01	Design Loads for Facilities
GH-CLIM-01	Design Climate Data for Hanford Site
Hanford SNF Strategic Plan	Strategic Plan for Managing Spent Nuclear Fuel on the Hanford Site, Draft, March 1994
HSRCM-1	Hanford Site Radiological Control Manual
IATA	International Air Transport Association, Dangerous Goods Regulations, 1994
Internal Memo, C. DeFigh-Price to L. E. Ebbeson	Standards/Requirements Identification Document Accountability - Adherence Self Assessment, 2A100-96.007, February 28, 1996
Internal Memo, D. W. Siddoway to C. L. Bennett	Memorandum of Understanding between K Basins and Analytical Services, February 13, 1996
Memorandum of Agreement	Utilization of HWVP Canister Storage Building (CSB) by Spent Nuclear Fuel Project Division (SFD), 6/25/95
MRP 1.1	Managing DOE Directives (from WHC-CM 1-3, Management Requirements and Procedures)
MRP 2.16	Processing Control Manual System Procedures (from WHC-CM-1-3, Management Requirements and Procedures)
MRP 4.16	Administering Progressive Discipline (from WHC-CM-1-3, Management Requirements and Procedures)
MRP 4.19	Overtime and Shift Differential for Salaried Non-Exempt Employees (from WHC-CM-1-3, Management Requirements and Procedures)
MRP 5.44	Waste Minimization Program (from WHC-CM-1-3, Management Requirements and Procedures)
MRP 6.15	Facility Shutdown, Stand By, and Transfer (from WHC-CM-1-3, Management Requirements and Procedures)
PL 92-500	Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)
PL-100-605	Hanford Reach Study Act, Comprehensive River Conservation Study
RCRA-B(DW)(940829)	Dangerous Waste Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Hazardous Waste
RCW 27.44	Indian Graves and Records
RCW 27.53	Archaeological Sites and Resources

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
RCW 46.37	Vehicle Lighting and Other Equipment
RCW 49.17	Washington Industrial Safety and Health Act
RCW 70.105	Washington Hazardous Waste Management Act
RCW 70.105D	Model Toxics Control Act
RCW 70.94	Washington Clean Air Act
RCW 70.95	Solid Waste Management - Recovery and Recycling
RCW 70.98	Nuclear Energy and Radiation
RCW 90.44	Regulation of Public Ground Waters
RCW 90.48	Water Pollution Control Act
RCW 90.52	Pollution Disclosure Act of 1971
RCW 90.76	Underground Storage Tanks
RLID 1300.1C	Facility Representative Program
RLID 232.1	Occurrence Reporting and Processing of Operations Information
RLID 430.1	Systems Engineering Criteria Document & Implementing Directive
RLID 471.2	Information Security Program
RLID 473.1	Protection of Safeguards and Security Interests
RLID 5000.1	Baseline Execution and Management Process
RLID 5000.3B	Occurrence Reporting and Processing of Operations Information
RLID 5480.31	Startup and Restart of Nuclear Facilities Operational Readiness Review and Readiness Assessments
RLID 5480.7	Fire Protection
RLID 5630.3A	Protection of Hanford Facilities Against Radiological and Toxicological Sabotage
RLID 5632.1B	Asset Protection Requirements
RLID 5633.3	Control and Accountability of Nuclear Materials at RL
RLID 94-043	Hanford Site Strategic Plan
RLIP 5484.1A	Environmental Protection, Safety, and Health Protection Information Reporting Requirements
RLPD 430.1	Hanford Site Systems Engineering Policy
SEN 35-91	Nuclear Safety Policy
U. S. Government Memo, B. J. Shackelford to Dist.	Attachments, Issue Papers on the Applicability of RCRA to Spent Nuclear Fuel
U.S. Department of Energy/U.S. Department of the N	DOE Letter 95-SFD-218, WHC Letter 9504811BR1
WA-000374-3	Authorization to Discharge Under the National Pollutant Discharge Elimination System
WA7890008967-DW	Dangerous Waste Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Hazardous Waste
WAC 173-200	Water Quality Standards for Ground Waters of the State of Washington
WAC 173-201A	Water Quality Standards for Surface Waters of the State of Washington
WAC 173-216	State Waste Discharge Permit Program
WAC 173-218	Underground Injection Control Program
WAC 173-220	National Pollutant Discharge Elimination System Permit Program
WAC 173-221	Discharge Standards and Effluent Limitations for Domestic Wastewater Facilities

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
WAC 173-225	Federal Water Pollution Control Act--Establishment of Implementation Procedures of Application for Certification
WAC 173-230	Certification of Operators of Wastewater Treatment Facilities
WAC 173-240	Submission of Plans and Reports for Construction of Wastewater Facilities
WAC 173-303	Dangerous Waste Regulations
WAC 173-304	Minimum Functional Standards for Solid Waste Handling
WAC 173-307	Plans
WAC 173-360	Underground Storage Tank Regulations
WAC 173-400	General Regulations for Air Pollution Sources
WAC 173-401	Operating Permit Regulations
WAC 173-435-010	Emergency Episode Plan
WAC 173-460	Control for New Sources of Toxic Air Pollutants
WAC 173-470	Washington Air Pollution Control Regulations, Ambient Air Quality Standard for Particulate Mater
WAC 173-480	Ambient Air Quality Standards and Emission Limits for Radionuclides
WAC 173-802(840615)	SEPA Procedures
WAC 197-11	SEPA Rules
WAC 220-110	Hydraulic Code Rules
WAC 246-247	Radiation Protection - Air Emissions
WAC 246-272	On-Site Sewage System
WAC 246-290	Public Water Supplies
WAC 246-291	Group B Public Water Systems
WAC 246-292	Operator Certification - Water System Operation Renewal of Certificates
WAC 246-294	Drinking Water Operating Permits
WAC 296-155	Safety Stds. for Construction Work
WAC 296-24	General Safety and Health Standards
WAC 296-27	Recordkeeping and Reporting
WAC 296-360	Discrimination, Pursuant to RCW 49.17.160
WAC 296-65	Asbestos Removal and Encapsulation
WAC 446-50	Transportation of Hazardous Materials
WAC 463-39	General and Operating Permit Regulations for Air Pollution Sources
WAC 470-12	Transporting Rules
WAC 51-11	Washington State Energy Code
WAR-00-000F	Stormwater Discharge Permit
WAR-10-000F	Stormwater Discharge Permit
WHC Letter 9553985	Submittal of Conceptual Design Review for Canister Storage Building, 7/24/65
WHC-CM-1	Management Policies
WHC-CM-1-10	Safety Manual
WHC-CM-1-11	Industrial Hygiene Manual
WHC-CM-1-5	Standard Operating Practices
WHC-CM-1-6	Work Management
WHC-CM-2-10	Cost Accounting Manual

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
WHC-CM-2-14	Hazardous Material Packaging and Shipping
WHC-CM-2-15	Training Administration Manual
WHC-CM-2-2	Materials Management Manual
WHC-CM-2-3	Property Management Manual
WHC-CM-2-5	Management Control System
WHC-CM-3-10	Software Practices
WHC-CM-3-5	Document Control and Records Management Manual
WHC-CM-4-14	Applied Radiological Controls
WHC-CM-4-16	Dosimetry and Medical Services Manual
WHC-CM-4-2	Quality Assurance Manual
WHC-CM-4-29	Nuclear Criticality Safety Manual
WHC-CM-4-33	Security Manual
WHC-CM-4-40	Industrial Hygiene Manual
WHC-CM-4-41	Fire Protection Program Manual
WHC-CM-4-43	Emergency Management Procedures
WHC-CM-4-46	Nonreactor Facility Safety Analysis Manual
WHC-CM-4-50	Safeguards Accounting Manual
WHC-CM-4-7	Unclassified Computer Security
WHC-CM-5-13	K Basin Policy Manual
WHC-CM-6-1	Standard Engineering Practices
WHC-CM-6-10	Welding Manual
WHC-CM-6-2	Project Management
WHC-CM-6-3	Drafting Standards Manual
WHC-CM-7-5	Environmental Compliance
WHC-CM-8-7	Operations Support Services
WHC-EP-0063-4	Hanford Site Solid Waste Acceptance Criteria
WHC-EP-0495	WHC Pollution Prevention Program Implementation Plan
WHC-EP-0790	Spent Nuclear Fuel Project Mission Analysis Report
WHC-EP-0830	Hanford Spent Nuclear Fuel Project Recommended Path Forward
WHC-EP-0853	DNFSB Recommendation 94-1 Hanford Site Integrated Stabilization Management Plan
WHC-IP-0565	Safeguards Desk Procedures
WHC-IP-0702	WHC 100 Area Emergency Response
WHC-IP-0821-PUO	Plutonium Operation Administration
WHC-IP-1043	WHC Occupational ALARA Program
WHC-IP-1140	Technical Procedure Development and Control
	Radiological Design Guide
WHC-SD-GN-DGS-3091	K Basin: Floor Loads and Calculation
WHC-SD-GN-ER-10005	
WHC-SD-GN-ES-30005	Site Design Criteria for Uniform Bolting Preloads

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
WHC-SD-GN-ICD-001, Rev. 1	Interface Agreement for the Management of the 308 Building Spent Nuclear Fuel, December 22, 1995
WHC-SD-NR-SA-024	105-KE/105-KW Irradiated Fuel Storage Basins Seismic Qualification
WHC-SD-SNF-CM-001	Spent Nuclear Fuel Project Configuration Management Plan
WHC-SD-SNF-CM-003	Spent Nuclear Fuel Project Interface Control Plan
WHC-SD-SNF-DB-002, Rev. 1	Spent Nuclear Fuel Project Path Forward - Nuclear Safety Equivalency to Comparable NRC-Licensed Facilities, dated June 3, 1996
WHC-SD-SNF-DB-003	Spent Nuclear Fuel Project Path Forward Additional NRC Requirements
WHC-SD-SNF-DB-004	Spent Nuclear Fuel Project Seismic Design Criteria
WHC-SD-SNF-DB-005	U.S. NRC Safety Equivalency Requirements; Multi-Canister Overpack Additional NRC Requirements
WHC-SD-SNF-DB-009	CSB Natural Phenomena Hazards/LA015, Revision 1, June 10, 1996
WHC-SD-SNF-DB-010	Cold Vacuum Drying System Natural Phenomena Hazards, Revision 0, June 7, 1996
WHC-SD-SNF-DGS-001	100 K Basins Design Guidelines
WHC-SD-SNF-DGS-002	SNF Project, Equipment and Piping Labeling Guide
WHC-SD-SNF-HC-011, Rev. 0	Hazard Categorization of K Basin Fuel Characterization, Phase II, February 7, 1996
WHC-SD-SNF-OCF-001	Spent Nuclear Fuel Conditioning Product Criteria, February 23, 1996
WHC-SD-SNF-PLN-011	Spent Nuclear Fuel Project Nuclear Safety Regulatory Program Plan
WHC-SD-SNF-PMP-011	Spent Nuclear Fuel Project, Project Management Plan
WHC-SD-SNF-QAPP-004	SNF Project, Quality Assurance Program Plan
WHC-SD-SNF-RPT-007	Application of the Office of Civilian Radioactive Waste Management Quality Assurance Requirements to the Hanford Spent Nuclear Fuel Project
WHC-SD-SNF-SEMP-001	Spent Nuclear Fuel Project Systems Engineering Management Plan
WHC-SD-SNF-SP-002	Spent Nuclear Fuel Regulatory Strategy
WHC-SD-SNF-SP-007	SNF Project, SNF Accountability Plan
WHC-SD-SNF-SP-009, Rev. 0	105 K East and 105 K West Fuel Transfer Bay Crane Use Strategy for Spent Nuclear Fuel Path Forward
WHC-SD-SNF-SP-010	SNF Project, Dose Management Plan
WHC-SD-SNF-TI-009	105 K Basin Material Design Basis Feed Description for Spent Nuclear Fuel Project Facilities
WHC-SD-SNF-TI-016	Development of Design Basis Capacity for SNF Project Systems
WHC-SD-WM-OSR-006	Operations Safety Requirements - 100 K East and 100 K West Fuel Storage Basins
WHC-SD-WM-SAR-052	Safety Analysis of Irradiated N-Reactor Fuel
WHC-SP-0708	Westinghouse Hanford Company Conduct of Operations Manual
WHC-SP-0866	Westinghouse Conduct of Maintenance Manual
WHC-SP-1104 Rev 1	Spent Nuclear Fuel Project 1996 Multi-Year Program Plan

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
WHC-SP-1131	Westinghouse Hanford Company QA Program and Implementation Plan

1.5 FUNCTIONAL DEFINITIONS

This section contains the Hanford Site Technical Baseline functions that are assigned to the project. It describes the project work in terms consistent with the Hanford Site Technical Baseline. The 'number' column in this section refers to the unique function number for the listed function as contained in the site technical baseline database maintained by Site Systems Engineering.

1.5.1 Manage SNF Disposition System

Table 1.5.1-1 Manage SNF Disposition System Functions

Number	Name / Description
1.0	Manage SNF Project Provide all planning, management direction, evaluation, and the management system for the SNF Project. Provide the management needed to conduct the mission. Specify management policies and procedures, provide configuration management, perform scheduling, allocate all resources, define performance criteria, and resolve regulatory problems.
3.0	Obtain Public Involvement Obtain public involvement and interaction needed to complete the mission of the SNF Project. Include public involvement in the decision making process and all related public information and relations activities. Identify decisions involving the public from the technical baseline for the project, formulate public involvement plans based on strategic analysis of each important decision, execute the public involvement plans, and reconcile differences between the project and the public values about the decisions when necessary. Transform public concerns and information into public involvement in the decisions made by project senior management.
3.1	Identify Technical Baseline Decisions(SNEP) Identify important decisions and related actions to be made and involve the public in defining the technical baseline decisions that need public involvement. The input to the function is "cleanup program information," which includes the technical baseline for the project. From this baseline, the technical baseline decisions involving the public are identified, as are the "public concerns and information," which includes assumptions, concerns, and general information about and from the public.
3.2	Perform Strategic Analysis and Develop Public Involvement Plan(SNEP) Perform an analysis of each technical baseline decision and develop a public involvement strategy for each specific decision that requires public involvement. Fully define the decisions and involve the public, participants, and decision makers. Determine constraints to public involvement, issues that bear on decisions, and objectives for each decision. Define information that needs to be exchanged with the public in developing the public involvement plan.
3.3	Execute Public Involvement Process(SNEP) Execute the public involvement process prescribed by the public involvement plan. Promulgate public information derived from the execution of the process, both to the public and to management, and also information on recommended decisions provided to management. Identify public values resulting from the process. Identify for further reconciliation recommendations not accepted by the public. Recommendations accepted by the public contribute to public involvement which is the key objective of the public involvement process.
3.4	Develop Understanding of Public/Project Differences(SNEP) Develop a full understanding of the differences between the public and the SNF Project for decision recommendations that are not accepted by the public. Define and analyze the differences. Develop defined value differences between the public and the project.
3.5	Reconcile Differences(SNEP) Reconcile the differences between the SNF Project and the public. Project management addresses differences and recommends changes to the proposed decision. The public evaluates the new recommendation, and recommends alternatives. This function is an iterative process that continues until a resolution is reached or the two parties agree that the differences cannot be reconciled.

1.5.2 Acquire SNF Disposition System

Table 1.5.2-1 Acquire SNF Disposition System Functions

Number	Name / Description
2.0	Acquire SNF Project Mission Essential Capabilities Provide all new intellectual and physical resources. This includes personnel, consultants, services, supplies, equipment, structures, systems, and components that are supplied by the site contractors, construction projects, and subcontracts of all kinds.
2.1	Formulate Acquisition Strategy for Mission Essential Capabilities(SNEP) Evaluate SNF Project acquisition needs with respect to opportunities for consolidation or assignment to a full-service, non-Hanford Site contractor. Opportunities identified are provided for Function 1.0, Manage Program, for programming or reprogramming.
2.2	Provide Expertise(SNEP) Provide new personnel and retrain existing professional personnel for new assignments outside their usual discipline, provide expert consultants, and acquire offsite expert services of all types.
2.3	Provide Technology(SNEP) Develop technology to meet objectives. If required, develop new technologies for the following: (1) cleanup of the K Basins water, (2) removal of sludge in the K Basins, (3) staging and interim storage technologies, (4) SNF conditioning (e.g., conversion of the SNF to other physical or chemical form or drying of the SNF).
2.4	Provide Facilities, Equipment, Infrastructure and Supplies(SNEP) Produce all facilities, equipment, software, and related items needed for all work activities, including all systems, subsystems, components, and structures.
2.5	Provide Essential Information(SNEP) Supply the entire SNF Project with access to various offsite databases, proprietary commercial data, and offsite expert systems and allow wide and easy access to internally generated information used in cleanup mission activities.
2.6	Provide Integrated Independent Services(SNEP) Deliver integrated service contracts for other integration efforts.

1.5.3 Operate & Maintain SNF Disposition System

Table 1.5.3-1 Operate & Maintain SNF Disposition System Functions

Number	Name / Description
4.7.2	Condition, Store, and Disposition SNF Material Safely and efficiently manage SNF handling, staging, conditioning, storing, and transferring for final disposition. The SNF includes irradiated fuel and other irradiated non-waste materials that have not been processed.
4.7.2.1	Operate and Maintain SNF Facilities Operate and maintain the facilities, structures, systems, components, safe and compliant equipment, and documentation. Maintain a qualified staff. Assess safe and compliance states. Provide all necessary resources for safe and compliant operation in accordance with governing safety codes and regulations.
4.7.2.2	Administer Condition, Store, and Disposition SNF Operations Plan, coordinate, and schedule all necessary operations within Function 4.7.2. Define the handling, stabilization, staging, storage, and transfer needs and criteria for SNF. Physical work activities for SNF handling, stabilization, staging, storage, and transfer are not included.
4.7.2.3	Stage K Basins SNF Receive shipments of SNF from K Basins, provide short-term storage of the SNF, and stage the SNF for transfer to conditioning.
4.7.2.4	Perform Hot Vacuum Conditioning Receive the MCO handling machine loaded with an MCO that contains dry SNF from the Canister Storage Building, execute all activity associated with the hot vacuum conditioning of SNF, and dispatch the MCO handling machine loaded with a sealed MCO that contains conditioned SNF for transfer back to the Canister Storage Building. This function includes subfunctions to monitor and control the MCO environment, radiation levels, and the hot vacuum conditioning process. It also includes the handling of the waste streams generated by the hot vacuum conditioning process.

Table 1.5.3-1 Operate & Maintain SNF Disposition System Functions (Continued)

Number	Name / Description
4.7.2.5	<u>Store SNF</u> Provide interim storage of conditioned K Basins SNF at the Canister Storage Building. Also provide interim storage of other SNF at the 200 Area and 400 Area interim storage areas.
4.7.2.6	<u>Stage SNF for Final Disposition</u> Prepare, condition, and transfer all Hanford Site SNF for final disposition. Disposition the SNF by one of two processes: transfer usable SNF or transfer materials for disposal. Arrange for disposal of incidental wastes during disposition process.

1.5.4 Dispose of SNF Disposition System

Table 1.5.4-1 Dispose of SNF Disposition System Functions

Number	Name / Description
4.1.1.9	<u>Deactivate SNF (Other) 400 Area</u> Deactivate the SNF (Other) 400 Area including the transfer of the SNF (Other) to the SNF (Other) 200 Area. This includes the facility and equipment.
4.1.1.10	<u>Deactivate Hot Vacuum Conditioning System</u> Deactivate the Hot Vacuum Conditioning Facility. This includes facility infrastructure and associated equipment.
4.1.1.11	<u>Deactivate Canister Storage Building (CSB)</u> Deactivate the Canister Storage Building. This includes facilities, associated equipment, and infrastructure, as well as the transfer of the SNF.
4.1.1.12	<u>Deactivate SNF (Other) 200 Area</u> Deactivate the SNF (Other) 200 Area. This includes the transfer of the fuel as well as the facility, associated equipment, and infrastructure.
4.1.1.14	<u>Deactivate Cold Vacuum Drying System</u> Deactivate the cold vacuum drying system. This includes system infrastructure and associated equipment.

1.5.5 Manage K Basin Deactivation System

Table 1.5.5-1 Manage K Basin Deactivation System Functions

Number	Name / Description
1.0	<u>Manage SNF Project</u> Provide all planning, management direction, evaluation, and the management system for the SNF Project. Provide the management needed to conduct the mission. Specify management policies and procedures, provide configuration management, perform scheduling, allocate all resources, define performance criteria, and resolve regulatory problems.
3.0	<u>Obtain Public Involvement</u> Obtain public involvement and interaction needed to complete the mission of the SNF Project. Include public involvement in the decision making process and all related public information and relations activities. Identify decisions involving the public from the technical baseline for the project, formulate public involvement plans based on strategic analysis of each important decision, execute the public involvement plans, and reconcile differences between the project and the public values about the decisions when necessary. Transform public concerns and information into public involvement in the decisions made by project senior management.
3.1	<u>Identify Technical Baseline Decisions(SNFP)</u> Identify important decisions and related actions to be made and involve the public in defining the technical baseline decisions that need public involvement. The input to the function is "cleanup program information," which includes the technical baseline for the project. From this baseline, the technical baseline decisions involving the public are identified, as are the "public concerns and information," which includes assumptions, concerns, and general information about and from the public.

Table 1.5.5-1 Manage K Basin Deactivation System Functions (Continued)

Number	Name / Description
3.2	Perform Strategic Analysis and Develop Public Involvement Plan(SNFP) Perform an analysis of each technical baseline decision and develop a public involvement strategy for each specific decision that requires public involvement. Fully define the decisions and involve the public, participants, and decision makers. Determine constraints to public involvement, issues that bear on decisions, and objectives for each decision. Define information that needs to be exchanged with the public in developing the public involvement plan.
3.3	Execute Public Involvement Process(SNFP) Execute the public involvement process prescribed by the public involvement plan. Promulgate public information derived from the execution of the process, both to the public and to management, and also information on recommended decisions provided to management. Identify public values resulting from the process. Identify for further reconciliation recommendations not accepted by the public. Recommendations accepted by the public contribute to public involvement which is the key objective of the public involvement process.
3.4	Develop Understanding of Public/Project Differences(SNFP) Develop a full understanding of the differences between the public and the SNF Project for decision recommendations that are not accepted by the public. Define and analyze the differences. Develop defined value differences between the public and the project.
3.5	Reconcile Differences(SNFP) Reconcile the differences between the SNF Project and the public. Project management addresses differences and recommends changes to the proposed decision. The public evaluates the new recommendation, and recommends alternatives. This function is an iterative process that continues until a resolution is reached or the two parties agree that the differences cannot be reconciled.

1.5.6 Acquire K Basin Deactivation System

Table 1.5.6-1 Acquire K Basin Deactivation System Functions

Number	Name / Description
2.0	Acquire SNF Project Mission Essential Capabilities Provide all new intellectual and physical resources. This includes personnel, consultants, services, supplies, equipment, structures, systems, and components that are supplied by the site contractors, construction projects, and subcontracts of all kinds.
2.1	Formulate Acquisition Strategy for Mission Essential Capabilities(SNFP) Evaluate SNF Project acquisition needs with respect to opportunities for consolidation or assignment to a full-service, non-Hanford Site contractor. Opportunities identified are provided for Function 1.0, Manage Program, for programming or reprogramming.
2.2	Provide Expertise(SNFP) Provide new personnel and retrain existing professional personnel for new assignments outside their usual discipline, provide expert consultants, and acquire offsite expert services of all types.
2.3	Provide Technology(SNFP) Develop technology to meet objectives. If required, develop new technologies for the following: (1) cleanup of the K Basins water, (2) removal of sludge in the K Basins, (3) staging and interim storage technologies, (4) SNF conditioning (e.g., conversion of the SNF to other physical or chemical form or drying of the SNF).
2.4	Provide Facilities, Equipment, Infrastructure and Supplies(SNFP) Produce all facilities, equipment, software, and related items needed for all work activities, including all systems, subsystems, components, and structures.
2.5	Provide Essential Information(SNFP) Supply the entire SNF Project with access to various offsite databases, proprietary commercial data, and offsite expert systems and allow wide and easy access to internally generated information used in cleanup mission activities.
2.6	Provide Integrated Independent Services(SNFP) Deliver integrated service contracts for other integration efforts.

1.5.7 Operate & Maintain K Basin Deactivation System

Table 1.5.7-1 Operate & Maintain K Basin Deactivation System Functions

Number	Name / Description
4.1.1.8	<u>Deactivate K Basins</u> Deactivate K Basins. Remove SNF, sludge, debris, contaminated water, and other radioactive or hazardous materials. Include K Basins facilities and equipment.
4.1.1.8.1	<u>Operate and Maintain K Basins During Deactivation</u> Operate and maintain the K Basins facilities, systems, and equipment. Maintain a qualified staff, safe and compliant equipment, and documentation. Provide assessment of safety conditions and state of compliance. Provide all necessary resources for safe and compliant operation in accordance with governing safety codes and regulations according to the K Basin standards/requirements identification document.
4.1.1.8.2	<u>Plan K Basins Deactivation</u> Assess the current state of the K Basins. Identify and/or negotiate material and equipment disposition requirements. Develop plans to deactivate facilities. Negotiate and administratively maintain the desired K Basins turnover end point specifications. Plan operations to support SNF retrieval, removal, and cold vacuum drying. Include debris, sludge, and water plans; operations for debris and sludge retrieval/removal; and K Basins water treatment system. Establish and maintain an archive of K Basins information.
4.1.1.8.3	<u>Disposition K Basins Materials</u> Execute activities necessary to perform and support SNF removal while maintaining accountability of SNF at all times. This includes characterization and categorization of materials and sludge, water, and debris supporting activities.
4.1.1.8.4	<u>Perform K Basins Deactivation</u> Deactivate nonessential systems, system components, and physical structures. Take other actions, as required, to minimize environmental, public, and personnel hazards; ensure actions taken are consistent with minimizing continuing costs at the K Basins.

1.5.8 Dispose of K Basin Deactivation System

Table 1.5.8-1 Dispose of K Basin Deactivation System Functions

Number	Name / Description
4.1.1.8.4	<u>Perform K Basins Deactivation</u> Deactivate nonessential systems, system components, and physical structures. Take other actions, as required, to minimize environmental, public, and personnel hazards; ensure actions taken are consistent with minimizing continuing costs at the K Basins.

1.6 PROJECT LIFE-CYCLE REQUIREMENTS

This section contains the requirements for each project life cycle phase including the project management requirements.

1.6.1 Manage SNF Disposition System

1.6.1.1 Manage SNF Project

1.6.1.2 Obtain Public Involvement

1.6.2 Acquire SNF Disposition System

1.6.2.1 Acquire SNF Project Mission Essential Capabilities

Table 1.6.2.1-1 Acquire SNF Project Mission Essential Capabilities Requirements

1	<p>SNFP(103.055) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.1 Systems Approach. A structured, risk-based management approach is required to integrate, coordinate, and optimize the activities necessary for conditioning, handling, and transportation of SNF in the near term, for interim storage, and in preparing the SNF for permanent disposal.</p>
2	<p>SNFP(103.067) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.1 Systems Approach. A systems approach shall be used to support program integration and to provide a structured, logical, documentable, and defensible approach to planning.</p>

1.6.3 Operate & Maintain SNF Disposition System

Table 1.6.3-1 Operate & Maintain SNF Disposition System Requirements

1	<p>MDD, Reactors on the River, Safety Objective S38 Provide surveillance and maintenance of the 1706 KE/KEUKER Facility.</p>
2	<p>MDD, Reactors on the River, Safety Objective S1 Maintain safe storage of irradiated fuel in K-Basins in accordance with the safety basis for the facility; maintain criticality control, operate corrosion control systems; monitor for fuel and facility deterioration.</p>
3	<p>MDD, Reactors on the River, Final, 1a Construct Canister Storage Building (CSB).</p>
4	<p>MDD, Reactors on the River, Final, 1b Construct Cold Vacuum Drying Facility.</p>
5	<p>MDD, Reactors on the River, Final, 1c Install Hot Vacuum Drying Facility.</p>
6	<p>MDD, Reactors on the River, Final, 1d Upgrade K-Basin Facility.</p>
7	<p>MDD, Reactors on the River, Final, 1e Install fuel retrieval system.</p>
8	<p>MDD, Reactors on the River, Final, 1f Fabricate transportation system and casks.</p>
9	<p>MDD, Reactors on the River, Final, 1g Fabricate multi-canister overpack containers.</p>
10	<p>MDD, Reactors on the River, Final, 1h Remove sludge to tank farms in the 200 Area for storage and treatment.</p>
11	<p>MDD, Reactors on the River, Final, 1i Fabricate sludge removal system.</p>
12	<p>MDD, Reactors on the River, Final, 1j Remove debris for decontamination and disposal.</p>
13	<p>MDD, Reactors on the River, Final, 1k Procure debris decontamination services.</p>
14	<p>MDD, Reactors on the River, Final, 1l Reduce radionuclides (except tritium) using basin water purification system.</p>
15	<p>MDD, Reactors on the River, Final, 1m Upgrade basins water purification system.</p>
16	<p>MDD, Reactors on the River, Final, 1 Spent fuel removed by 12/31/99. K-Basins cleaned sufficient to transition to D&D by 10/31/2000</p>
17	<p>MDD, Central Plateau, Interim, 3a Permits for canister storage bldg. obtained.</p>
18	<p>MDD, Central Plateau, Interim, 3b FFTF materials placed in interim storage.</p>
19	<p>MDD, Central Plateau, Interim, 3c TRIGA Reactor materials placed in interim storage.</p>
20	<p>MDD, Central Plateau, Interim, 3d BWR, PWR placed in interim storage.</p>
21	<p>MDD, Central Plateau, Interim, 3e B-Cell Cleanout Special Case Fuel placed in interim storage.</p>

Table 1.6.3-1 Operate & Maintain SNF Disposition System Requirements (Continued)

22	MDD, Central Plateau, Interim 3f Stage K-Basins spent fuel in CSB.
23	MDD, Central Plateau, Interim 3g Condition "Hot Vacuum Dry" spent fuel.
24	MDD, Central Plateau, Interim 3h Store conditioned fuels in CSB.
25	MDD, Central Plateau, Interim 3i Obtain National Repository waste and packaging criteria (WAC & PAC).
26	MDD, Central Plateau, Final 39a Assure spent fuels are safe, stable, and "road-ready".
27	MDD, Central Plateau, Final 39b Provide interim storage.
28	MDD, Central Plateau, Final 39c Obtain permits for transporting off-site.
29	MDD, Central Plateau, Final 39d Obtain National Repository waste and packaging criteria (WAC & PAC).
30	MDD, Central Plateau, Final 39e Assure material complies with National Repository WAC & PAC.
31	MDD, Central Plateau, Interim 3 Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.
32	MDD, South 600, Final 4a Transport applicable FFTF fuels to 200 Interim Storage Area.
33	MDD, South 600, Final 4b Transport TRIGA fuels to 200 ISA.
34	MDD, South 600, Final 4c Transport light water reactor fuels to 200 ISA.
35	MDD, South 600, Final 40a Assure materials are safe, stable, "road-ready".
36	MDD, South 600, Final 40b Provide interim storage.
37	MDD, South 600, Final 40c Obtain permits for transporting out of 300, 400 Areas.
38	MDD, South 600, Interim 59a Obtain permit to store in 400 Interim Storage Area (ISA).
39	MDD, South 600, Interim 59b Transport light water reactor fuels to 400 ISA.
40	MDD, South 600, Final 4 Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed to 200 Area.
41	MDD, South 600, Final 40 Spent fuels (sodium bonded FFTF) removed off-site for final disposition.
42	MDD, South 600, Interim 59 Spent fuels (light water reactor) removed to interim storage in 400 Area pending availability of 200 Area interim storage.
43	RHST, page 3, 3.2.4 (010) Nuclear materials shall eventually be disposed at an offsite location, but onsite safe, stable storage shall be required for at least 50 years.
44	RHST, page 3, 3.2.4 (030) Nuclear materials (Spent Nuclear Fuels) shall eventually be disposed at an offsite location, but onsite safe, stable storage shall be required for at least 50 years.

1.6.3.1 Condition, Store, and Disposition SNF Material

Table 1.6.3.1-1 Condition, Store, and Disposition SNF Material Requirements

1	<p>SNFP(4.001) Requirement Reference: DOE Letter 95-SFD-098, Office of Civilian Radioactive Waste Management (OCRW), "Quality Assurance Requirements and Description (QARD) (RW-033P)", July 12, 1995</p> <p>As a minimum, the requirements in the QARD apply to the following SNF activities as they relate to disposal in the repository: characterization for data collection for input or use; conditioning into final form; and handling, packaging, and transportation. Compliance with the applicable sections of this document is required. To eliminate duplication of effort, it is recommended that application of the QARD requirements be considered for those Hanford SNF activities whose results can also be used to support final characterization, conditioning, or packaging in preparation for disposal as we can define it today. If QARD requirements are applied to these types of activities, the application should be consistent with the current budget and schedule.</p>
2	<p>SNFP(6.001) It is important that the MCO being designed for SNF be dimensionally compatible with the MPC, such that for future transport and ultimate disposal in the National Repository the MCOs could be placed inside MPCs.</p>
3	<p>SNFP(9.001) The existing CSB site and foundation will be transferred from the Tank Waste Remediation System (TWRS) to SFD. Secondary priorities will be to utilize excess CSB space to store other Hanford spent fuels or radioactive materials.</p>
4	<p>SNFP(82.008) In concert with federal, state, and public direction, Hanford Site programs are directed to embrace pollution prevention to the maximum extent possible. They will incorporate waste minimization, waste volume reduction, and recycling into their program planning. Site programs are directed to implement waste minimization and pollution prevention activities to prevent pollution from entering the environment; conserve resources and energy; and reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary waste generated at the Hanford Site.</p>
5	<p>SNFP(82.013) Material Disposition Responsibilities. The Spent Nuclear Fuel Program will define and establish alternative interim storage for spent nuclear fuel on site or transport it off site to support implementation of the pending NEPA decision. In addition, this program will define and establish a spent nuclear fuel waste package qualified for final disposition.</p>
6	<p>SNFP(82.016) Nuclear materials will be treated, as necessary, and stored on site in long-term interim safe and secure storage pending development and implementation of a national policy regarding their final disposition.</p>
7	<p>SNFP(82.022) Paragraph 19. Store SNF destined for off-site disposition at an on-site location until off site locations are prepared to accept SNF.</p>
8	<p>SNFP(82.023) Paragraph 20. When off-site locations are prepared to accept SNF arrange off-site shipments.</p>
9	<p>SNFP(82.031) Site cleanup will be performed in accordance with the Tri-Party Agreement (Ecology et al.1994), as amended, and other agreements, and in compliance with all applicable federal, state, and local laws and American Indian treaty rights. Hanford Site programs must also comply with DOE policies and directives.</p>
10	<p>SNFP(84.007) Requirement Reference: 95-AMW-003 (p. 2, para. 2) RL wants to ensure that the program proceeds on a path which achieves dry storage as directly as possible. This necessitates the following actions by WHC: Ensure that all aspects of the Program Plan are oriented towards a direct-dry objective, including the National Environmental Policy Act, the acquisition strategy, the program schedule, and the program budget.</p>
11	<p>SNFP(84.013) Requirement Reference: 95-AMW-003 (#6) The conditioning facility must be co-located with the storage facility.</p>
12	<p>SNFP(84.014) Requirement Reference: 95-AMW-003 (p. 1, para. 4) The K Basins SNF is to be placed in multi-canister overpacks (MCOs), removed from the basins and transported to a new facility where it will be temporarily staged, then dewatered, dried, conditioned, passivated, and then stored for an extended period.</p>
13	<p>SNFP(84.019) Requirement Reference: 95-AMW-003 (#8) WHC will input to S. Clark on dose assessments for K Basin and Path Forward activities.</p>

Table 1.6.3.1-1 Condition, Store, and Disposition SNF Material Requirements (Continued)

14	<p>SNFP(85.001) Along with the very aggressive ALARA dose reduction effort required for the fuel rerecking process, a project-wide dose management effort, including a total project dose budget, is needed.</p>
15	<p>SNFP(85.005) WHC is directed to proceed and implement the integrated process strategy.</p>
16	<p>SNFP(103.001) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.5 Accident Radioactive Releases. New SNF facilities shall be designed, constructed, and operated such that after a design basis accident, potential exposure to radiation shall be within regulatory requirements, as specified in applicable sections of Title 10 of the Code of Federal Regulations (CFR).</p>
17	<p>SNFP(103.003) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.3.8 Assurance of Storage Viability. Criteria and methods, appropriate to each fuel form and storage method, shall be established to assure continued safe storage of DOE-owned SNF.</p>
18	<p>SNFP(103.004) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.3.4 Canisterization. The SNF program shall undertake a joint effort with RW to utilize a standardized canister, developed by RW, for storing, transporting, and disposing of DOE-owned SNF.</p>
19	<p>SNFP(103.005) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.1.4 Characterization. The technology development program shall establish the technical basis needed to demonstrate SNF integrity during existing storage. Ensuring SNF integrity during storage implies that the storage environment be such that, while changes may occur in the physical state of the SNF, those changes do not cause any unacceptable safety risk or foreclose any reasonable disposition option.</p>
20	<p>SNFP(103.006) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.6 Characterization. The technology development program shall establish technical bases for interim storage and permanent disposal of DOE-owned SNF, and shall develop criteria and procedures to ensure that the SNF and facilities satisfy the technical bases.</p>
21	<p>SNFP(103.007) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.2 Codes and Standards. New SNF facilities shall be designed, constructed, and operated to modern commercial industry codes and standards.</p>
22	<p>SNFP(103.008) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.3.6 Conditioning. SNF shall be conditioned to the extent necessary to meet the WAC for permanent disposal in a geologic repository.</p>
23	<p>SNFP(103.009) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.3.7 Conditioning. SNF shall be conditioned to the extent necessary to ensure its integrity under long-term interim storage conditions. When evaluating conditioning options for interim storage, the waste acceptance criteria (WAC) established for geologic disposal shall be considered.</p>
24	<p>SNFP(103.011) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.4.3 Configuration Management. Formal documentation controls shall be used throughout the SNF program, including design and operations activities, to assure that requirements are clearly defined and controlled and that SNF facilities satisfy the technical, safety and operational needs.</p>
25	<p>SNFP(103.012) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.1 Construction of New Facilities. Construction and operation of new SNF facilities shall be scheduled to minimize life cycle costs for storage of DOE-owned SNF, subject to satisfying commitments and applicable requirements for worker safety, public health, and environmental protection.</p>
26	<p>SNFP(103.015) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.1 Decisionmaking. Decisions regarding SNF facilities shall resolve competing interests in a manner which recognizes the following priorities: public and worker health and safety, environmental protection, operations, and cost.</p>

Table 1.6.3.1-1 Condition, Store, and Disposition SNF Material Requirements (Continued)

27	<p>SNFP(103.016) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.10 Decontamination and Decommissioning. New SNF facilities shall be designed, constructed, maintained, and operated to facilitate eventual decontamination and decommissioning.</p>
28	<p>SNFP(103.017) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.4 Defense-in-Depth. Designs for new SNF facilities shall utilize the fundamental principles of defense-in-depth (i.e., redundancy and diversity) to assure that critical safety functions are achieved and that multiple barriers to the release of radioactivity are provided. Application of this principle shall include specific emphasis on the prevention and/or mitigation of design basis events.</p>
29	<p>SNFP(103.018) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.4 Demonstration Projects. Technical and safety bases shall be developed for suitable demonstration projects to support licensability reviews by the NRC and to facilitate procurement of standardized facility designs within the DOE-complex.</p>
30	<p>SNFP(103.019) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.3 Design Life. New SNF facilities shall be designed for a minimum of life of 40 years.</p>
31	<p>SNFP(103.021) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.5 Dry Storage. New SNF storage facilities shall utilize existing commercial storage technologies to minimize life cycle costs by taking advantage of commercial standards and licensing bases, and shall employ dry storage methods to the maximum extent permitted by environmental, safety, and cost considerations.</p>
32	<p>SNFP(103.022) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.6.2 Emergency Planning. New SNF facilities shall be designed with a goal to eliminate the need for off-site evacuation and sheltering. In addition, SNF features and information necessary to support effective site emergency response actions shall be included in the design and coordinated with the emergency planning of the respective DOE sites.</p>
33	<p>SNFP(103.023) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.9 Environmental Monitoring. SNF facilities shall utilize real time monitoring of facility effluents as a tool for minimizing environmental impacts.</p>
34	<p>SNFP(103.024) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.3 Existing Facilities. Modifications and upgrades to existing facilities shall be designed and executed to minimize adverse environmental impact.</p>
35	<p>SNFP(103.025) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.3 Facilities Authorization Basis. New SNF facilities shall be sited, designed, constructed, and operated to modern industry standards promulgated for new facilities having equivalent functions within the commercial nuclear industry. Where existing, Nuclear Regulatory Commission (NRC) technical requirements shall be incorporated into the design, construction, and operation of new SNF facilities.</p>
36	<p>SNFP(103.028) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.1 General Safety Requirement. Safety of the public, the worker, and the protection of the environment shall be a primary consideration in program planning and execution, and in the design, construction, startup, and operation of SNF facilities.</p>
37	<p>SNFP(103.031) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.4 Instrumentation and Plant Controls. The design of the man-machine interface for operation and control of new SNF facilities shall incorporate human factors engineering principles and operating experience to promote safety and high operational reliability.</p>
38	<p>SNFP(103.032) Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.2.4 Interfaces. Systems engineering methods shall be employed in the specification and design of new SNF facilities to ensure the recognition and accommodation of interfaces among major systems, subsystems, support facilities, and external functions and systems, including SNF disposal and facilities decontamination and decommissioning.</p>

Table 1.6.3.1-1 Condition, Store, and Disposition SNF Material Requirements (Continued)

39	<p><u>SNFP(103.036)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.1 Maintenance. New SNF facilities shall have ready access to equipment, provide support equipment located and sized to facilitate work, assure that systems and components have high reliability, use automation when cost effective and safety enhancing, and provide for mockups and training aimed at reducing radiological exposure and easy repair or replacement of components. Preventative maintenance approaches shall receive primary focus when undertaking facility maintenance planning.</p>
40	<p><u>SNFP(103.037)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.1 National Environmental Policy Act (NEPA). SNF facilities shall be designed, constructed, and operated in full compliance with the NEPA, as specified by implementing regulations in 40 CFR 1500-1508 (on a governmental wide basis) and 10 CFR 1021 (for DOE).</p>
41	<p><u>SNFP(103.038)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.2 New Facilities. New SNF facilities shall be designed, constructed, and operated in full compliance with applicable Federal, State and local laws and regulations for the protection of the environment.</p>
42	<p><u>SNFP(103.039)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.6 Occupational Exposure. New SNF facilities shall be designed, constructed, and operated such that worker exposures during normal operations and anticipated operational occurrences are within regulatory requirements, as specified in applicable sections of Title 10 of the Code of Federal Regulations. Actions shall be taken to achieve the fundamental goal of reducing worker exposures to as low as reasonably achievable (ALARA).</p>
43	<p><u>SNFP(103.041)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.4 Pollution Prevention and Waste Minimization. SNF facilities shall be designed, constructed, and operated to integrate the fundamental goals of (1) reducing through source reduction and recycling the total release of hazardous materials to the environment, (2) establishing site-specific goals for the reduction of the generation of all types of wastes and pollutants from site operations, and (3) establishing operational restrictions to meet as low as is reasonably achievable (ALARA) objectives for radioactive materials in effluents.</p>
44	<p><u>SNFP(103.042)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.2 Pre-Operational Testing. Restart of existing facilities and pre-operation and startup testing of new SNF facilities shall be planned and conducted to assure proper performance of components and subsystems individually and as part of the overall facility performance. New facilities shall be designed for ease of system and hardware checkouts.</p>
45	<p><u>SNFP(103.045)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.3 Program Plans. The SNF program shall prepare and maintain a combined Program Plan, Program Management Plan, and Systems Engineering Management Plan (SNF Program Plan). Included as a subset of this SNF Program Plan are the following planning documents: Technology Integration Plan. The Technology Integration Plan shall document the plans and activities necessary to address technical issues associated with managing existing SNF storage, achieving safe interim storage, and preparing the SNF for permanent disposal. *Interim Storage Plan. The Interim Storage Plan shall document the plans and activities necessary to safely manage existing SNF facilities and to bring on line new facilities and to bring on line new interim storage activities on a national level and optimizing storage schedules. *Stakeholder Involvement Plan. The Stakeholder Involvement Plan shall document the organizations, interrelationships, and procedures established to effect broad and thorough discussions of SNF activities. The Plan shall establish a framework for early and substantive stakeholder involvement in defining the nature of the SNF program and the process for program execution, and shall describe how stakeholder involvement will be sought throughout the decision making process.</p>
46	<p><u>SNFP(103.043)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.4.1 Quality Assurance Program Description (QAPD). As an appendix to EM-30's OAPD, the SNF program shall prepare and maintain a QAPD based on the requirement of 10 CFR 830.120 and appropriate consensus standards referenced in Implementation Guide IG-830.120 (reference 1). The consensus standards shall be selected to appropriately control existing and planned SNF activities such as fuel treatment, storage and disposal. The SNF Quality Assurance Program shall also incorporate the requirements of the civilian high-level radioactive waste program contained in RW-0333P (reference 2).</p>
47	<p><u>SNFP(103.047)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.4.2 Quality Assurance (QA) Requirements. Quality Assurance controls shall be applied, using a graded approach, commensurate with the degree of importance of SNF program activities, to the proper conditioning and storage of SNF and to achieve compatibility with the geologic disposal system and related RW activities.</p>

Table 1.6.3.1-1 Condition, Store, and Disposition SNF Material Requirements (Continued)

48	<p><u>SNFP(103.048)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.2 Regulatory Compliance. SNF facilities shall be designed, constructed, and operated in full compliance with applicable Federal, State and local laws and regulations for the protection of the public and worker health and safety.</p>
49	<p><u>SNFP(103.051)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.8 Safety Documentation. Safety Analysis Reports (SARs) and Technical Safety Requirements (TSRs), or Technical Specifications (per NRC regulations) as appropriate, shall be developed to establish facility safety bases and to control SNF facility operations.</p>
50	<p><u>SNFP(103.061)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.5 Site Related Hazards. SNF facilities shall be designed to commercial industry standards for resistance to seismic events, floods, winds, and other natural phenomena.</p>
51	<p><u>SNFP(103.053)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.3 Staff Training. Training of facility staff shall be conducted based on standards consistent with the importance of the function and complexity of operations.</p>
52	<p><u>SNFP(103.064)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.3 Staff Training. A staff training program shall be implemented to meet either DOE or nuclear power industry standards, as appropriate for the particular operation. Retraining and recertification shall be part of the operator training plan.</p>
53	<p><u>SNFP(103.069)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.2 Technology Development. The SNF technology development program shall minimize the number and scope of technology demonstration projects for DOE-owned SNF through incorporation of the objectives and results of existing government and industry sponsored technology development programs, and shall reflect the significant lessons learned from the design and operation of commercial spent fuel facilities. Existing and proven commercial facility designs shall be adapted for DOE use, when appropriate.</p>
54	<p><u>SNFP(103.072)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.7 Worker Safety and Industrial Hygiene. New SNF facilities shall be designed, constructed, and operated such that worker exposures to occupational safety hazards are within regulatory requirements, as specified in applicable sections of Titles 40 and 49 of the Code of Federal Regulations (CFR).</p>
55	<p><u>SNFP(104.022)</u> Paragraph 15. The TPA commits the parties:</p> <ul style="list-style-type: none"> to follow RCRA procedures for TSD units, to identify interim cleanup actions where appropriate, implement selected RCRA and CERCLA interim actions, to the requirements the TPA establishes for conducting investigations and studies, to response action schedules incorporated into the TPA, to cleanup levels established by CERCLA or CERCLA ARARs.
56	<p><u>SNFP(104.024)</u> Paragraph 19. RCRA and CERCLA remedial actions are to protect human health and the environment to an extent that no further actions will be required after actions under the agreement are completed. The actions are to address all aspects of contamination at units included in the action plan. Remediation of groundwater may be managed either as a remedial and corrective action or as part of permitting and closure of TSD units.</p>

1.6.4 Dispose of SNF Disposition System

1.6.4.1 Deactivate SNF (Other) 400 Area

1.6.4.2 Deactivate Hot Vacuum Conditioning System

1.6.4.3 Deactivate Canister Storage Building (CSB)

1.6.4.4 Deactivate SNF (Other) 200 Area

1.6.4.5 Deactivate Cold Vacuum Drying System

1.6.5 Manage K Basin Deactivation System

1.6.5.1 Manage SNF Project

1.6.5.2 Obtain Public Involvement

1.6.6 Acquire K Basin Deactivation System

1.6.6.1 Acquire SNF Project Mission Essential Capabilities

Table 1.6.6.1-1 Acquire SNF Project Mission Essential Capabilities Requirements

1	<p><u>SNFP(103.066)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.1 Systems Approach. A structured, risk-based management approach is required to integrate, coordinate, and optimize the activities necessary for conditioning, handling, and transportation of SNF in the near term, for interim storage, and in preparing the SNF for permanent disposal.</p>
2	<p><u>SNFP(103.067)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.1 Systems Approach. A systems approach shall be used to support program integration and to provide a structured, logical, documentable, and defensible approach to planning.</p>

1.6.7 Operate & Maintain K Basin Deactivation System

Table 1.6.7-1 Operate & Maintain K Basin Deactivation System Requirements

1	<p><u>MDD, Reactors on the River, Safety Objective S38</u> Provide surveillance and maintenance of the 1706 KE/KEL/KER Facility.</p>
2	<p><u>MDD, Reactors on the River, Safety Objective S1</u> Maintain safe storage of irradiated fuel in K-Basins in accordance with the safety basis for the facility; maintain criticality control, operate corrosion control systems; monitor for fuel and facility deterioration.</p>
3	<p><u>MDD, Reactors on the River, Final, 1a</u> Construct Canister Storage Building (CSB).</p>
4	<p><u>MDD, Reactors on the River, Final, 1b</u> Construct Cold Vacuum Drying Facility.</p>
5	<p><u>MDD, Reactors on the River, Final, 1c</u> Install Hot Vacuum Drying Facility</p>
6	<p><u>MDD, Reactors on the River, Final, 1d</u> Upgrade K-Basin Facility</p>
7	<p><u>MDD, Reactors on the River, Final, 1e</u> Install fuel retrieval system.</p>
8	<p><u>MDD, Reactors on the River, Final, 1f</u> Fabricate transportation system and casks.</p>
9	<p><u>MDD, Reactors on the River, Final, 1g</u> Fabricate multi-canister overpack containers.</p>
10	<p><u>MDD, Reactors on the River, Final, 1h</u> Remove sludge to tank farms in the 200 Area for storage and treatment.</p>

Table 1.6.7-1 Operate & Maintain K Basin Deactivation System Requirements (Continued)

11	MDD, Reactors on the River, Final 1j Fabricate sludge removal system.
12	MDD, Reactors on the River, Final 1j Remove debris for decontamination and disposal.
13	MDD, Reactors on the River, Final 1k Procure debris decontamination services.
14	MDD, Reactors on the River, Final 1j Reduce radionuclides (except tritium) using basin water purification system.
15	MDD, Reactors on the River, Final 1m Upgrade basins water purification system.
16	MDD, Reactors on the River, Final 1 Spent fuel removed by 12/31/99, K-Basins cleaned sufficient to transition to D&D by 10/31/2000
17	MDD, Central Plateau, Interim 3a Permits for canister storage bids obtained.
18	MDD, Central Plateau, Interim 3b FFTF materials placed in interim storage.
19	MDD, Central Plateau, Interim 3c TRIGA Reactor materials placed in interim storage.
20	MDD, Central Plateau, Interim 3d SIVR, PWR placed in interim storage.
21	MDD, Central Plateau, Interim 3e B-Cell Cleanout Special Case Fuel placed in interim storage.
22	MDD, Central Plateau, Interim 3f Stage K-Basins spent fuel in CSB.
23	MDD, Central Plateau, Interim 3g Condition "Hot Vacuum Dry" spent fuel.
24	MDD, Central Plateau, Interim 3h Store conditioned fuel in CSB.
25	MDD, Central Plateau, Interim 3i Obtain National Repository waste and packaging criteria (WAC & PAC).
26	MDD, Central Plateau, Final 39a Assure spent fuels are safe, stable, and "road-ready".
27	MDD, Central Plateau, Final 39b Provide interim storage.
28	MDD, Central Plateau, Final 39c Obtain permits for transporting off-site.
29	MDD, Central Plateau, Final 39d Obtain National Repository waste and packaging criteria (WAC & PAC).
30	MDD, Central Plateau, Final 39e Assure material complies with National Repository WAC & PAC.
31	MDD, Central Plateau, Interim 3 Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.
32	MDD, South 600, Final 4a Transport applicable FFTF fuels to 200 Interim Storage Area
33	MDD, South 600, Final 4b Transport TRIGA fuels to 200 ISA.
34	MDD, South 600, Final 4c Transport light water reactor fuels to 200 ISA.
35	MDD, South 600, Final 40a Assure materials are safe, stable, "road-ready".
36	MDD, South 600, Final 40b Provide interim storage.
37	MDD, South 600, Final 40c Obtain permits for transporting out of 300, 400 Areas.
38	MDD, South 600, Interim 59a Obtain permit to store in 400 Interim Storage Area (ISA).
39	MDD, South 600, Interim 59b Transport light water reactor fuels to 400 ISA.
40	MDD, South 600, Final 4 Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed to 200 Area.
41	MDD, South 600, Final 40 Spent fuels (sodium bonded FFTF) removed off-site for final disposition.

Table 1.6.7-1 Operate & Maintain K Basin Deactivation System Requirements (Continued)

42	<p><u>MDD, South 600, Interim 59</u> Spent fuels (light water reactor) removed to interim storage in 400 Area pending availability of 200 Area Interim storage.</p>
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1.6.7.1 Deactivate K Basins

Table 1.6.7.1-1 Deactivate K Basins Requirements

1	<p><u>SNFP(5.001)</u> Requirement Reference: BHI Letter 0162-15, Memorandum of Understanding for Safeguards and Security of Nuclear Material at N Reactor, June 15, 1995</p> <p>WHC will perform all tasks related to safeguards and security for NM identified during N Basin stabilization. WHC will determine the amount of NM discovered and add it to the existing N Basin MBA. WHC will verify the material is stored appropriately in a designated area within N Basin and will perform periodic surveillance to verify that safeguards and security are maintained. BHI and WHC will make arrangements for the transfer of the NM to K Basins. WHC will close the N Reactor MBA and terminate all NM accountability at N Basin following basin stabilization when the possibility of discovering NM no longer exists.</p>
2	<p><u>SNFP(6.001)</u> It is important that the MCO being designed for SNF be dimensionally compatible with the MPC, such that for future transport and ultimate disposal in the National Repository the MCOs could be placed inside MPCs.</p>
3	<p><u>SNFP(7.002)</u> Requirement Reference: DOE Letter 95-NMD-071, Approval of K Basins Sludge Disposition Strategy, June 13, 1995</p> <p>RL directs WHC to continue to work on dispositioning of the K-East and K-West Basin floor sludges to be sent to either the Tank Farms or the Solid Waste Management Facility as appropriate.</p>
4	<p><u>SNFP(7.003)</u> RL directs WHC to continue dispositioning small pieces of fuel and canister sludges as spent nuclear fuel to be processed and sent to dry storage, along with the rest of the fuel, if those cannot be transferred to Tank Farms or the Solid Waste Management Facility.</p>
5	<p><u>SNFP(14.005)</u> Requirement Reference: DNFSB 94-1 Interim measures have and will be taken including installing a cofferdam between the K-East Basin and the reactor discharge chute by April 1995.</p>
6	<p><u>SNFP(14.011)</u> Requirement Reference: DNFSB 94-1 (Section 2.2) Progress of the Department's nuclear material stabilization activities will be monitored through the site plans described below and compared with the Integrated Program Plan. The need for management action will be identified in part through this comparison with the site plans, which will be updated monthly. Integrated Program Plan (IPP): This Implementation Plan is the baseline IPP called for by Recommendation 94-1. The Plan addresses the stabilization of the identified material categories, and will be modified by program decisions or as schedules change due to changes in program requirements. Planned additions to the IPP are sections that address complex-wide requirements for technology research and development that will be developed by the Research Committee and the long range facility requirements section, to be developed by the Integration Working Group. Site Integrated Stabilization Management Plans (SISMPs): The SISMP documents the activities for the nuclear material categories at each site in response to the objectives and requirements of the IPP. They will also contain a specific subsection, a Facilities Plan (FP) that will discuss what facilities and facility capabilities will be used to undertake the site-wide stabilization activities. The SISMPs will be updated in response to program direction and to document changes in schedule.</p>
7	<p><u>SNFP(14.013)</u> Requirement Reference: DNFSB 94-1 (Section 3.6.2) K Basins Path Forward Near-Term Objectives - Other activities to improve the near-term safety and environmental posture at the K-Basins include: "Development of a path forward for basin sludge that considers the probable differences between sludge in the fuel canisters and sludge lying on the basin floor. While the sludge contained in the fuel canisters is primarily the result of fuel corrosion, the vast majority of the sludge on the basin floor is believed to consist of blow sand, structural material oxides, and concrete spallation products. While the canister sludge could remain with the fuel and be considered SNF, it may be possible to dispose of the basin sludge through existing waste disposal systems.</p>

Table 1.6.7.1-1 Deactivate K Basins Requirements (Continued)

8	<p>SNFP(14.014) Requirement Reference: DNFSB 94-1 (Section 3.6.2) Key schedule dates supporting the K Basins Path Forward between now and December 31, 1995, are: *Develop potential funding options and an acquisition strategy as appropriate by the end of March 1995. *Issue Notice of Intent for K Basins EIS in March 1995. *Complete cofferdam installation in K-West Basin by February 1995 and in K-East Basin by April 1995. (K-West installation is being performed first to qualify materials, processes, and procedures before installation in the more adverse conditions in K-East Basin.) *Start fuel characterization in hot cells by April 1995. *Issue K Basins EIS Record of Decision by December 1995. *Initiate sludge retrieval demonstration in conjunction with cofferdam installation by April 1995. Additional dates will be included in the K Basins Integrated schedule that will be issued by May 1995. Include the following milestones: *Complete NEPA process. *Submit project validation package. *Initiate development for N Reactor fuel stabilization process. *Finalize site identification and initiate site characterization for facilities. *Place contract(s) for necessary equipment and facilities. *Begin fuel removal from K Basins. *Design Multi-Canister Overpack. *Begin Multiple-Canister Overpack manufacture. *Start and complete construction of Canister Storage Building. *Start and complete construction of Conditioning Facility. *Start and complete fuel stabilization. *K Basin fuel in dry storage.</p>
9	<p>SNFP(14.020) Requirement Reference: DNFSB 94-1 Fuel and sludge characterization in hot cells will begin by April 1995.</p>
10	<p>SNFP(82.008) In concert with federal, state, and public direction, Hanford Site programs are directed to embrace pollution prevention to the maximum extent possible. They will incorporate waste minimization, waste volume reduction, and recycling into their program planning. Site programs are directed to implement waste minimization and pollution prevention activities to prevent pollution from entering the environment; conserve resources and energy; and reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary waste generated at the Hanford Site.</p>
11	<p>SNFP(82.014) Material Management Responsibilities. The Spent Fuel Program is responsible for near-term safe storage of spent nuclear fuel in the 105-K Basins. The NEPA process will be used to make a decision of how and where spent nuclear fuel will be managed on the Site.</p>
12	<p>SNFP(82.027) Paragraph 5. Conduct planning and carry out activities to clean out retired facilities to conditions appropriate for turnover to D&D efforts.</p>
13	<p>SNFP(82.031) Site cleanup will be performed in accordance with the Tri-Party Agreement (Ecology et al 1994), as amended, and other agreements, and in compliance with all applicable federal, state, and local laws and American Indian treaty rights. Hanford Site programs must also comply with DOE policies and directives.</p>
14	<p>SNFP(84.007) Requirement Reference: 95-AMW-003 (p. 2, para. 2) RL wants to ensure that the program proceeds on a path which achieves dry storage as directly as possible. This necessitates the following actions by WHC: Ensure that all aspects of the Program Plan are oriented towards a direct-dry objective, including the National Environmental Policy Act, the acquisition strategy, the program schedule, and the program budget.</p>
15	<p>SNFP(84.019) Requirement Reference: 95-AMW-003 (#8). WHC will input to S. Clark on dose assessments for K Basin and Path Forward activities.</p>
16	<p>SNFP(84.022) Requirement Reference: 95-AMW-003 (#1) K Basin fuel removal will commence by 12/1/97 and be complete by December 1999.</p>
17	<p>SNFP(85.001) Along with the very aggressive ALARA dose reduction effort required for the fuel reracking process, a project-wide dose management effort, including a total project dose budget, is needed.</p>

Table 1.6.7.1-1 Deactivate K Basins Requirements (Continued)

18	<p><u>SNFP(85.005)</u> WHC is directed to proceed and implement the Integrated process strategy.</p>
19	<p><u>SNFP(103.005)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.1.4 Characterization. The technology development program shall establish the technical basis needed to demonstrate SNF integrity during existing storage. Ensuring SNF integrity during storage implies that the storage environment be such that, while changes may occur in the physical state of the SNF, those changes do not cause any unacceptable safety risk or foreclose any reasonable disposition option.</p>
20	<p><u>SNFP(103.015)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.1 Decisionmaking. Decisions regarding SNF facilities shall resolve competing interests in a manner which recognizes the following priorities: public and worker health and safety, environmental protection, operations, and cost.</p>
21	<p><u>SNFP(103.024)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.3 Existing Facilities. Modifications and upgrades to existing facilities shall be designed and executed to minimize adverse environmental impact.</p>
22	<p><u>SNFP(103.025)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.3 Facilities Authorization Basis. New SNF facilities shall be sited, designed, constructed, and operated to modern industry standards promulgated for new facilities having equivalent functions within the commercial nuclear industry. Where existing, Nuclear Regulatory Commission (NRC) technical requirements shall be incorporated into the design, construction, and operation of new SNF facilities.</p>
23	<p><u>SNFP(103.026)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.1.3 Facilities Transition. A structured, risk-based management approach shall be used to determine the order and schedule for phaseout of existing SNF facilities.</p>
24	<p><u>SNFP(103.034)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.1.2 Life Extension. Programs shall be undertaken for existing SNF facilities to permit their continued use pending transfer of stored SNF to new, interim storage facilities. Existing SNF facilities shall be utilized to the extent practical, considering safety, life cycle cost, reliability, operability, and maintainability.</p>
25	<p><u>SNFP(103.037)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.1 National Environmental Policy Act (NEPA). SNF facilities shall be designed, constructed, and operated in full compliance with the NEPA, as specified by implementing regulations in 40 CFR 1500-1508 (on a governmental wide basis) and 10 CFR 1021 (for DOE).</p>
26	<p><u>SNFP(103.041)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.3.4 Pollution Prevention and Waste Minimization. SNF facilities shall be designed, constructed, and operated to integrate the fundamental goals of (1) reducing through source reduction and recycling the total release of hazardous materials to the environment, (2) establishing site-specific goals for the reduction of the generation of all types of wastes and pollutants from site operations, and (3) establishing operational restrictions to meet as low as is reasonably achievable (ALARA) objectives for radioactive materials in effluents.</p>
27	<p><u>SNFP(103.042)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.2 Pre-Operational Testing. Restart of existing facilities and pre-operation and startup testing of new SNF facilities shall be planned and conducted to assure proper performance of components and subsystems individually and as part of the overall facility performance. New facilities shall be designed for ease of system and hardware checkouts.</p>
28	<p><u>SNFP(103.043)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 5.1.1 Prioritization. Structured risk analysis methods shall be used to prioritize actions needed for resolution of existing SNF vulnerabilities.</p>

Table 1.6.7.1-1 Deactivate K Basins Requirements (Continued)

29	<p><u>SNFP(103.045)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.1.3 Program Plans. The SNF program shall prepare and maintain a combined Program Plan, Program Management Plan, and Systems Engineering Management Plan (SNF Program Plan). Included as a subset of this SNF Program Plan are the following planning documents: *Technology Integration Plan. The Technology Integration Plan shall document the plans and activities necessary to address technical issues associated with managing existing SNF storage, achieving safe interim storage, and preparing the SNF for permanent disposal. *Interim Storage Plan. The Interim Storage Plan shall document the plans and activities necessary to safely manage existing SNF facilities and to bring on line new facilities and to bring on line new interim storage activities on a national level and optimizing storage schedules. *Stakeholder Involvement Plan. The Stakeholder Involvement Plan shall document the organizations, interrelationships, and procedures established to effect broad and thorough discussions of SNF activities. The Plan shall establish a framework for early and substantive stakeholder involvement in defining the nature of the SNF program and the process for program execution, and shall describe how stakeholder involvement will be sought throughout the decision making process.</p>
30	<p><u>SNFP(103.048)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.2.2 Regulatory Compliance. SNF facilities shall be designed, constructed, and operated in full compliance with applicable Federal, State and local laws and regulations for the protection of the public and worker health and safety.</p>
31	<p><u>SNFP(103.051)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.5 Site Related Hazards. SNF facilities shall be designed to commercial industry standards for resistance to seismic events, floods, winds, and other natural phenomena.</p>
32	<p><u>SNFP(103.053)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.3 Staff Training. Training of facility staff shall be conducted based on standards consistent with the importance of the function and complexity of operations.</p>
33	<p><u>SNFP(103.054)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.7.3 Staff Training. A staff training program shall be implemented to meet either DOE or nuclear power industry standards, as appropriate for the particular operation. Retraining and recertification shall be part of the operator training plan.</p>
34	<p><u>SNFP(103.059)</u> Requirement Reference: SNF-RD-PM-001 Rev 0, Section 4.5.2 Technology Development. The SNF technology development program shall minimize the number and scope of technology demonstration projects for DOE-owned SNF through incorporation of the objectives and results of existing government and industry sponsored technology development programs, and shall reflect the significant lessons learned from the design and operation of commercial spent fuel facilities. Existing and proven commercial facility designs shall be adapted for DOE use, when appropriate.</p>
35	<p><u>SNFP(104.001)</u> DOE will conduct RCRA-compliant facility assessments and report the results. The facility assessments are to conform to EPA policy and to requirements and schedules in the TPA action plan. para. 49</p>
36	<p><u>SNFP(104.011)</u> M-34-93-01. It is the common goal of DOE, Ecology, and EPA to move the fuel and sludge (once encapsulated) from the K-East Basin and the encapsulated materials from K West Basin to a safer long-term storage facility..."</p>
37	<p><u>SNFP(104.02)</u> Paragraph 130. To signify completion of required response actions for an operable unit, the lead regulatory agency for the unit will issue a notice of completion to DOE. The lead agency may issue a notice of completion for partial completion of response actions for a unit.</p>
38	<p><u>SNFP(104.002)</u> DOE will conduct RCRA-compliant facility investigations and report the results. The facility investigations are to conform to EPA policy and to requirements and schedules in the TPA action plan. para. 51</p>
39	<p><u>SNFP(104.03)</u> Paragraph 54. DOE will propose remedial actions or corrective actions which conform to EPA policy and to requirements and schedules in the TPA action plan.</p>
40	<p><u>SNFP(104.005)</u> M-34-00-T01. Issue Notice of Intent for N-Reactor Fuel EIS. Due Date: 6/30/94</p>

Table 1.6.7.1-1 Deactivate K Basins Requirements (Continued)

41	<p><u>SNFP(104.006)</u> M-34-00-T04. Submit a schedule describing activities for the final disposition of contaminated K-East basin water for planning purposes to support the 100-KR-4 record of decision. Due Date: 10/31/94</p>
42	<p><u>SNFP(104.007)</u> M-34-00-T05. DOE shall provide a schedule for fuel and sludge encapsulation and contaminated water removal or replacement to Ecology and EPA that supports the TPA milestone. Due Date: 3/31/95</p>
43	<p><u>SNFP(104.011)</u> M-34-02. Initiated negotiations with ecology and EPA on incorporation of transition activities including stabilization of the basins, consistent with section 3.1 of the agreement (as amended) and the record of decision regarding long-term storage and ultimate disposition of the irradiated fuel. DOE will submit a signed Tri-Party Agreement change request proposing milestones for (1) the completion of removal of fuel and sludge from the K-Basins and (2) the completion of stabilization of the basins. Due Date: 6/30/95</p>
44	<p><u>SNFP(104.012)</u> M-34-00-T03. Submit an engineering study to determine the feasibility of moving and temporarily storing K-East fuel and sludge (once encapsulated) to the K-West basin. Due Date: 9/30/94</p>
45	<p><u>SNFP(104.015)</u> Paragraph 101. If the regulators conclude that additional work or modifications to planned work are necessary, they are to notify DOE. DOE is to assess its ability to perform the newly identified work, and inform the regulators of its evaluation.</p>
46	<p><u>SNFP(104.019)</u> Paragraph 112. The regulators are entitled to five days' advance notice of well drilling, sampling, or other monitoring activity.</p>
47	<p><u>SNFP(104.022)</u> Paragraph 15. The TPA commits the parties:</p> <ul style="list-style-type: none"> *to follow RCRA procedures for TSD units, *to identify interim cleanup actions where appropriate, implement selected RCRA and CERCLA interim actions, *to the requirements the TPA establishes for conducting investigations and studies, *to response action schedules incorporated into the TPA, *to cleanup levels established by CERCLA or CERCLA ARAAs.
48	<p><u>SNFP(104.023)</u> Paragraph 18. CERCLA may provide the most effective regulatory framework for remediating groundwater, but Ecology intends that remedial actions addressing groundwater contamination from TSD utilities will meet RCRA requirements.</p>
49	<p><u>SNFP(104.024)</u> Paragraph 19. RCRA and CERCLA remedial actions are to protect human health and the environment to an extent that no further actions will be required after actions under the agreement are completed. The actions are to address all aspects of contamination at units included in the action plan. Remediation of groundwater may be managed either as a remedial and corrective action or as part of permitting and closure of TSD units.</p>
50	<p><u>SNFP(104.027)</u> Paragraph 49. DOE will conduct CERCLA-compliant remedial investigations and report the results. The remedial investigations are to conform to EPA policy and to requirements and schedules in the TPA action plan.</p>
51	<p><u>SNFP(104.029)</u> Paragraph 53. DOE will undertake RCRA-compliant corrective measures studies and report the results. The facility assessments are to conform to EPA policy and to requirements and schedules in the TPA action plan.</p>
52	<p><u>SNFP(104.031)</u> Paragraph 55. After regulators have selected remedial actions and corrective actions, DOE will submit a detailed plan for implementing each action. The plan is to include operations and maintenance plans, appropriate timetables and schedules. DOE is to implement each plan when it is approved.</p>

Table 1.6.7.1-1 Deactivate K Basins Requirements (Continued)

53	<u>SNFP(104.032)</u> Paragraph 56. All work described above, whether labeled "remedial action" or "corrective action," and whether performed pursuant to CERCLA and an RIF/S or the RCRA/HSWA equivalent shall be governed by this Part Three. CERCLA remedial action and, as appropriate, HSWA corrective action shall meet ARARs in accordance with CERCLA Section 121.
54	<u>SNFP(104.033)</u> Paragraph 90. The TPA is not intended to produce cleanup actions which make other actions less effective. [Articles XXV and XXVI contain procedures for resolving circumstances where actions appear physically inconsistent.]
55	<u>SNFP(104.035)</u> M-34-00-T09. Initiate fuel packaging. Due Date: December 1997.
56	<u>SNFP(104.036)</u> M-34-00-T10. Complete fuel packaging. Due Date: December 1999.
57	<u>SNFP(104.037)</u> M-34-00-T11. Complete fuel removal from K Basins. Due Date: December 1999.
58	<u>SNFP(104.038)</u> M-34-00-T12. Issue a plan including schedule for completion of fuel stabilization. DOE will submit a signed Tri-Party Agreement Change Request proposing new milestones. Due Date: September 1995.
59	<u>SNFP(104.039)</u> M-34-00-T13. Establish path definition/path forward for sludge. Due Date: December 1995.
60	<u>SNFP(104.040)</u> M-34-00-T14. Initiate bulk sludge removal from K Basins. Due Date: TBD.
61	<u>SNFP(104.041)</u> M-34-00-T15. Complete bulk sludge removal from K Basins. Due Date: December 2000.
62	<u>SNFP(104.042)</u> M-34-00-T16. Complete debris removal from K Basins. Due Date: December 2002.
63	<u>SNFP(104.043)</u> M-34-00-T17. Complete Removal/Disposal of Contaminated Debris in K Basins. Due Date: December 2001.
64	<u>SNFP(104.044)</u> M-34-00-T05. Complete development of Unit Manager recommendations regarding K Basins. Due Date: March 1995.
65	<u>SNFP(104.045)</u> M-34-03. Complete removal of fuel and sludge from the K Basins. Due Date: December 2002.

1.6.8 Dispose of K Basin Deactivation System

1.6.8.1 Perform K Basins Deactivation

Table 1.6.8.1-1 Perform K Basins Deactivation Requirements

1	<u>SNFP(82.031)</u> Site cleanup will be performed in accordance with the Tri-Party Agreement (Ecology et al. 1994), as amended, and other agreements, and in compliance with all applicable federal, state, and local laws and American Indian treaty rights. Hanford Site programs must also comply with DOE policies and directives.
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1.7- PROJECT ISSUES AND ASSUMPTIONS

Table 1.7-1 contains the issues that affect the project. These include project specific issues, as well as the site-level issues that have been assigned to the project for resolution. It also contains the assumptions that are used as a basis for the development of project plans until the issues are formally resolved with records of decision. The "Champion" column determines if the Project has lead responsibility or is an affected participant. If the champion belongs to the Project, the Project has the lead. If not, the Project is an affected participant. Project plans include appropriate activities and resources for resolving these issues.

NOTE: Please see tables in section 5.0.

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WBS HIERARCHY

The Project Authorization Documents (PADs) are the contractual work authorization between Fluor Daniel Hanford, Inc. (FDH) and their major subs. (These PADs are the equivalent extension of the work authorization that DOE issues to FDH.) The PADs are written in accordance with the (FDH/Duke Engineering & Services Hanford, Inc. (DESH) contract, reflect common FDH/DESH management strategies and are consistent with the Spent Nuclear Fuel (SNF) Project Management Plan (PMP).

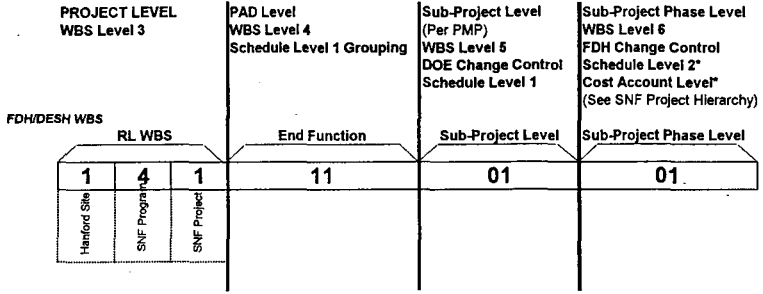
The previous Westinghouse Hanford Company WBS numbering system, specifically at the sub-project level (WBS 5) does not conform, both vertically and horizontally, to the PMP, Configuration Control, schedule roll-up or the management strategy employed in the Rev. 0 MYWP. At the Cost Account Level (CA-WBS Level) the individual blocks were found to be adequate to support the management strategies and requirements described above, if realigned. This realignment can take place one of two ways;

- (1) Completely renumber the financial data system, its history and assign new cost account codes to all cost inputs (i.e., payroll, POs, contracts, etc.), or
- (2) Realign the existing WBS Level 6 Cost Accounts to conform with the requirements via use of the PADs.

To minimize impact to the Project, the second option was selected and is represented in the MYWP baselines.

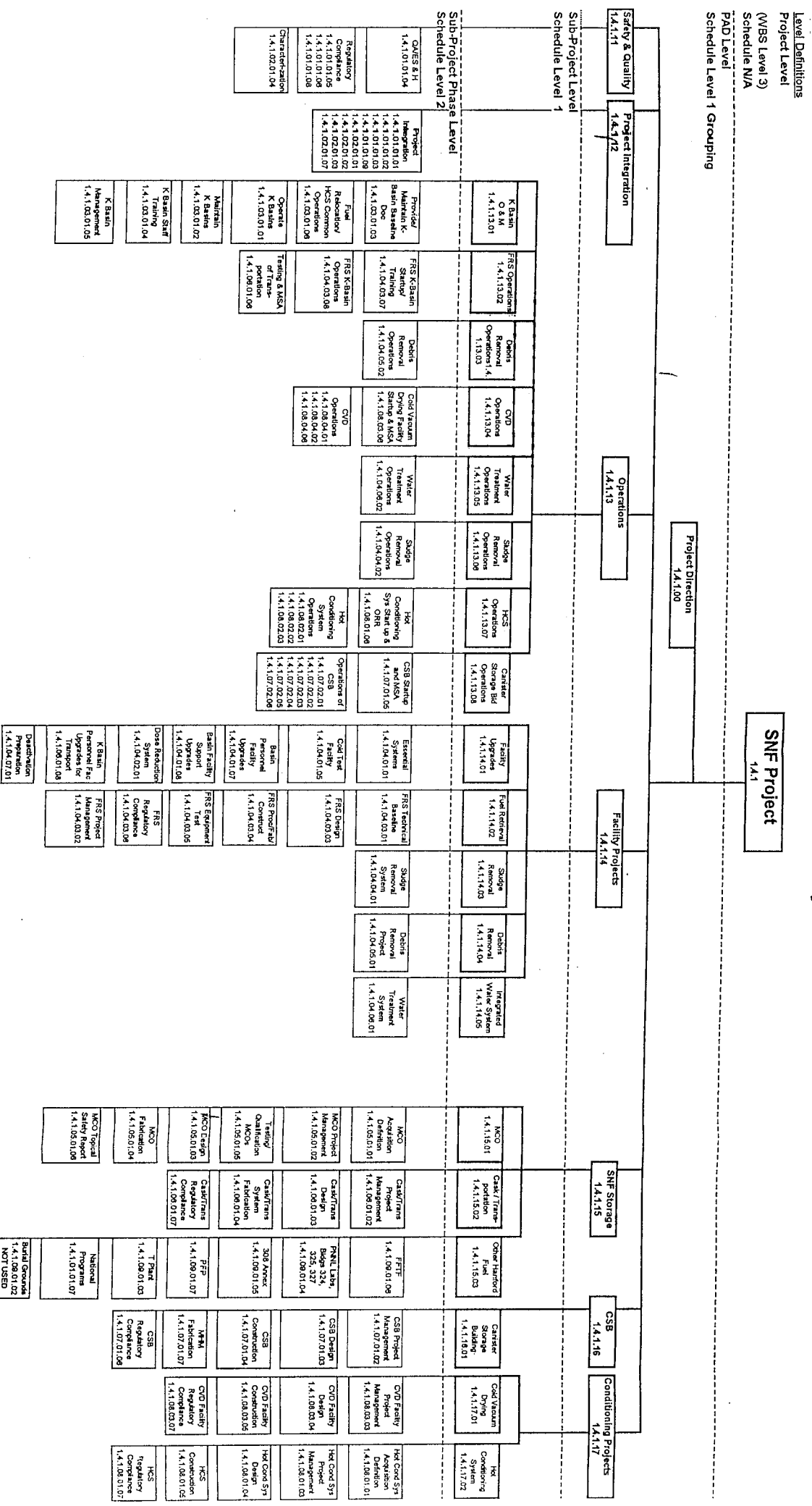
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*Future system enhancements will evaluate final 1 to 1 alignment between the existing WBS Level 6 Cost Account and the Sub-project Phase Level as represented in Schedule Level 2.

SNF Project Hierarchy



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SNF Project WBS, OBS & Level of Control Matrix

Level Definitions

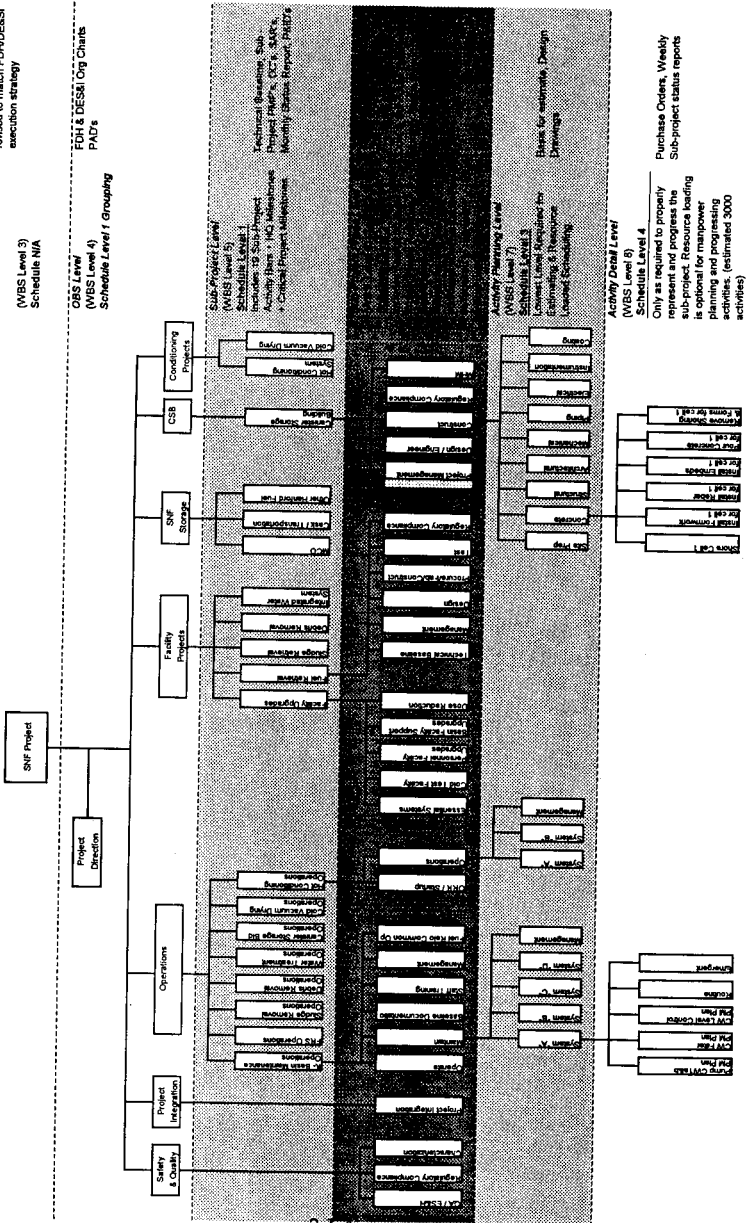
Project Level
(WBS Level 3)
Schedule N/A

Document Levels

PMP Note: PMP defines the subprojects and will be used to match FOP/DESS execution strategy

GWS Level 4
(WBS Level 4)
Schedule Level / Grouping

PSI & DESI Orig Charts
PAO's



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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14100
4 PROJECT ELEMENT CODE 1.4.1.00	5 PROJECT ELEMENT TITLE Project Direction	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000	

A. STATEMENT OF WORK

Work To Be Performed

The Spent Nuclear Fuel Project Director is the key point of contact for the major subcontractor and is the designated FDH Contracting Officer's Representative (COR). The responsibilities of the project director's group include the following:

- Lead the development of life-cycle baseline, multi-year, and current fiscal-year plans; integrating the subcontractor into the planning process; and ensuring Sitewide integration of these activities from a scope, schedule, interface, and resource perspective
- Interface with DOE-RL and stakeholders regarding incorporation of regulatory commitments and other requirements

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- The prioritization of work activities to accomplish project results on the basis of DOE-RL's Integrated Priority List and budget direction supported by risk/benefit assessments that consider safety, environmental, technical, and cost factors
- Serving as COR to provide technical and administrative direction, to review the subcontractors project work for compliance, to monitor progress, and to verify status and completion of performance measures
- Integrate project activities in PHMC by facilitating effective communications and resolving issues among projects, ES&H, PHMC subcontractors, PHMC support organizations, management, and DOE-RL clients.

The Sub-project Phase 1 elements are as follows: 1.4.1.00

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

All deliverables as listed in the WBS Dictionaries.

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14111
4 PROJECT ELEMENT CODE 1.4.1.11	5 PROJECT ELEMENT TITLE Safety & Quality	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000	

A. STATEMENT OF WORK

Work To Be Performed

The Project Safety and Quality WBS Level 4 element encompasses the development/maintenance of QA, Regulatory and Characterization plans and supporting documents associated with the safe, environmentally acceptable, regulatory compliant, and cost effective interim storage for Hanford's spent nuclear fuel consistent with the DOE complex spent fuel disposition plans and in compliance with state and federal regulations.

The scope includes management, administration and integration of SNF project activities associated with environmental, safety and healthy, quality; regulatory compliance, and characterization.

Safety and Quality consists of three main sub-elements at the sub-project level.

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Quality Assurance/ES&H - develop and maintain Spent Nuclear Fuel Project Quality Assurance Program Plans (QAPP) consistent with regulatory and contractual requirements, conduct assessments to assure compliance to the QAPPs. At this time OCRWM QA requirements are not included. Ensure a consistent approach to NEPA, CAA, and other environmental regulatory-driven documentation for all facilities containing Spent Nuclear Fuel. Preparation and Review is provided for all necessary environmental documentation. Tri-Party Agreement (TPA) negotiations and status activities relative to spent fuel issues are also covered here.

Regulatory Compliance - develop & maintain SNF Project regulatory policy, strategy, and coordinate/support regulatory reviews. This includes supporting funding for key Regulatory Requirement Team Members and support for Independent Review Panel activities. Also ensures a consistent approach to regulatory documentation for all facilities within the SNF Project. Prepare and maintain the Integrated Safety Management Plan (ISMP), per DNFSB 95-2, which outlines how safety will be integrated, including scheduling data for SARS, permits, etc. Other cross-cutting regulatory plans will also be developed and implemented as required.

Characterization - collect samples of fuel and sludge from the KE and KW Basins; conduct analyses; provide evaluated data describing the physical, chemical, and radiological characteristics of the fuel and sludge to analytical lab and hot cells for analysis; and conduct tests as necessary to support resolution of technical issues. Furthermore, these data will likewise be used to support products or processes such as MCOs, transportation, conditioning and storage.

The Sub-project Phase 1 elements are as follows:

QA/ES&H (1.4.1.01.01.04)
Regulatory Compliance (1.4.1.01.01.05, 1.4.1.01.01.06, 1.4.1.01.01.08)
Characterization (1.4.1.02.01.04)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

- Quality Assurance Plans and Project Quality Assurance surveillances.
- Regulatory Strategy Report, Price Anderson Amendments Act plan, Integrated Safety Management Plan (ISMP) and central database of regulatory requirements.
- Development of supporting State/Federal Regulatory permits and applications.

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- Sub-project supporting safety analysis such as PSE, PSAR, Phased SAR's and FSAR's as required
- Characterization Management Plan
- Complete sampling, analyses and reporting of KE/KW canisters
- Complete the 2nd KW Fuel Sampling, the non-destructive examination of 2nd Fuel Samples and the canister sludge sampling, analyses and reporting data
- Complete examinations and analyses of the KE fuel and report, and the KE canister sludge and report
- K Basins Fuel and Sludge sampling and laboratory analysis consisting of acquiring fuel/sludge samples from KE/KW, transportation to Hot analytical labs such as: 327, 325 or 222S consistent with design/safety requirements. Analysis will include oxidation rates, water content, combustibility and hazardous waste such as PCBs

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14112
4 PROJECT ELEMENT CODE 1.4.1.12	5 PROJECT ELEMENT TITLE Project Integration	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000	

A. STATEMENT OF WORK

Work To Be Performed

The Project Integration sub-project element develops, coordinates, and administers the project baseline including the fully-integrated resource based schedule and all changes and revisions to it in a manner which is cost effective, consistent with the DOE complex spent fuel disposition plans and in compliance with state and federal regulations.

The scope includes the program administration, integration and project controls activities required to manage the project. The resource loaded integrated scheduling and budgeting activities provide the cost and schedule baseline. It also, encompasses the overall technical direction for the Spent Nuclear Fuel Project and facilitates the overall technical strategy for the Project and resolution of technical issues as necessary in implement the strategy

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The Sub-project Phase 1 elements are as follows:

Project Integration (1.4.1.01.01.01, 1.4.1.01.01.02, 1.4.1.01.01.03, 1.4.1.01.01.09,
1.4.1.02.01.01, 1.4.1.02.01.02, 1.4.1.02.01.03, 1.4.1.02.01.07)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

- SNF Project cost and schedule baselines, program plans, project control documents, and change management documents.
- Site planning and reporting documents including Multi-Year Work Plans, SMS, and PTS, 10-year Plan and PBS.
- Administrative reports and activities including, significant events, monthly project review packages, all project related documents and correspondence, recognition awards and events.
- Meetings, briefings and reports to stakeholders, Indian tribes, governmental officials, civil entities and the media as requested by project director.
- Revisions to Systems Engineering Management Plan, Project-level Technical Baseline, Interface Control Plan, Configuration Management Plan, and Interface Control Agreements.
- Verification of expected project MCO throughput using commercial modeling software.
- Process throughput capacity and modeling

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14113
4 PROJECT ELEMENT CODE 1.4.1.13	5 PROJECT ELEMENT TITLE Operations	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000 EW7002010 (Basin Operations)	

A. STATEMENT OF WORK

The SNF Operations WBS Level 4 encompasses the work to maintain the facilities in a safe, environmentally sound condition. This includes facility operations and maintenance, handling and storage of spent nuclear fuel; and operational support of the Spent Nuclear Fuel Project.

The scope contained in the WBS element includes the management, technical, clerical and bargaining unit personnel performing maintenance, surveillance, documentation, training, fuel removal operations, procedure preparation, readiness assessments/reviews, and security for the fuel storage basins and the supporting utility systems. Non-labor cost elements include maintenance materials and waste disposal charges.

1.4.1.03 OPERATIONS:

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K Basin O & M:

Provide for the operation of all K Basin facilities and systems including K East, K West, and the water treatment plant. Provide funds for electric utility power and maintenance assessments, fire systems maintenance assessments, performance of required surveillance, material / waste handling and disposal assessments, emergency preparedness activities, safeguards and security activities, radiological control, safety, and quality assurance.

O&M provides funding for planning, engineering design/modification support, scheduling, tracking, and performing of maintenance work packages and activities.

O&M provides funding for development and maintenance of policies and procedures, regulatory compliance and technical safety activities, including engineering design support and configuration control of baseline documentation.

O&M provides funding for development, implementation, and management of the training program for all O&M staff, including all required qualifications and certifications.

O&M provides funding for K Basins independent oversight and self assessment activities, K Basins Management Activities, tracking of commitments and action items as well as management direction and administrative services.

FRS Operations:

Perform operations planning, mobilization, start-up and ORR of the FRS and Cask/Transportation System. This includes operations staff ramp up and training, establishment of FRS management systems, procedure development, and start-up and operational testing. This activity also provides operational input to the Projects for design, procurement, permitting, and Safety Analysis Report development, as well as operational support for fuel retrieval.

O&M provides funding for plant operational activities including shift management, facility maintenance, HPT and lab services and surveillance, training, and procedural development.

Debris Removal Operations:

Includes removal of underwater debris from 105 KE and 105 KW Basins. Efforts will focus on moving and/or removing empty fuel canisters and clearing areas to facilitate fuel and sludge removal from the basins. Operational activities for the removal of the empty canisters, old tools, cables, gloves, and miscellaneous materials of debris in 105 KE and 105 KW Basins are included. Debris Removal activities include removing debris from the South Load Out Pit, cleaning and

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removing empty canisters from the basins prior to fuel processing and removal, and general debris removal.

CVD Operations:

Perform Cold Vacuum System start-up, ORR, and operations. This includes operations staff ramp up and training, establishment of CVD management systems, and procedure development. This activity also provides operational input to the CVD Project for design, procurement, permitting, and Safety Analysis Report development, as well as operational support for the CVD.

Water Treatment Operations:

The integrated water system is needed to handle particulate and ion loading in basin water due to liberation of canister sludge and basin turbidity. Operational activities for the treatment of water in the basins include replacement of Ion Exchange Modules (IXMs) and Cartridge Filters (Cfs). Disposition of 45 Legacy Water System IXC's, design, installation, safety analysis, preparation for operations and readiness review.

Sludge Retrieval Operations:

Provides systems to manage the sludge/sediment on the floor and pits of 105 K East (KE) and the sand filter backwash pit in 105 K West (KW) Basins, and canister sludge in KE and KW and floor sludge in KE. The sub-project will retrieve the sludge from the KE Basin floor and pits and transfer to staging areas with the basin; treat/package the sludge; and transfer the sludge to long term storage outside the K Basins. Sludge removal will be executed in two phases. The first phase consists of retrieving and relocating the KE floor sludge to the weasel pit area for temporary staging. The second phase consists of removing sludge from the KE pits/staging area and the KW sand filter backwash pit to a double shell tank at TWRS. The activity also provides operational input to the Sludge Retrieval Project for design, procurement, permitting and safety analysis report development, as well as operational support for sludge retrieval.

HCS Operations:

Perform Hot Conditioning System start-up, ORR, and operations. This includes operations staff ramp up and training, establishment of HCS management systems, and procedure development. This activity also provides operational input to the HCS Project for design, procurement, permitting, and Safety Analysis Report development, as well as operational support for the HCS.

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CSB Operations:

Perform CSB start-up, ORR, and operations. This includes operations staff ramp up and training, establishment of CSB management systems, and procedure development. This activity also provides operational input to the CSB Project for design, procurement, permitting, and Safety Analysis Report development, as well as operational support for the CSB.

The Sub-project Phase 1 elements are as follows:

K Basin O&M

- K Basins Baseline Documentation: (1.4.1.03.01.03)
- Fuel Relocation/HCS Common Operations (1.4.1.03.01.06)
- K Basin Operations: (1.4.1.03.01.01)
- Maintain K Basins: (1.4.1.03.01.02)
- K Basins Staff Training: (1.4.1.03.01.04)
- K Basins Management (1.4.1.03.01.05)

FRS Operations

- FRS K Basin Start-Up/Training (1.4.1.04.03.07)
- FRS K Basin Operations (1.4.1.04.03.08)
- Testing and ORR of Transportation: (1.4.1.06.01.06)

Debris Removal Operations

- Debris Removal Operations (1.4.1.04.05.02)

CVD Operations

- CVD Facility Start-Up & MSA: (1.4.1.08.03.06)
- Operations of CVD Facility: (1.4.1.08.04.01, 1.4.1.08.04.02, 1.4.1.08.04.06)

Water Treatment Operations

- Water Treatment Operations: (1.4.1.04.06.02)

Sludge Removal Operations

- K Basin Sludge Removal Operations (1.4.1.04.04.02)

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HCS Operations

HCS Start-Up & ORR (1.4.1.08.01.06)
Hot Conditioning System Operations (1.4.1.08.02.01, 1.4.1.08.02.02,
1.4.1.08.02.03)

CSB Operations

CSB Start-Up & MSA: (1.4.1.07.01.05)
Operations of CSB: (1.4.1.07.02.01, 1.4.1.07.02.02, 1.4.1.07.02.03,
1.4.1.07.02.04, 1.4.1.07.02.05, 1.4.1.07.02.06)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

- Maintain and operate the fuel storage basins at 100 K Area, CVD, and CSB/HCA in a safe and environmentally sound manner.
- Complete and verify training for special nuclear fuel handling personnel in compliance with DOE order.
- Complete required surveillance and maintenance to ensure compliance with TSR and SAR.
- Complete the management system portion - SNF ORR.
- Train Operators and Complete ORRs.
- Clean canisters.
- Remove debris.
- Remove sludge.
- Clean, repackage, load and transport fuel from K Basins to CSB.
- Operate integrated water system to ensure water quality during fuel removal.
- Disposition of 45 Legacy Water System IXC's, design, installation, safety analysis, preparation for operations and readiness review.

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14114
4 PROJECT ELEMENT CODE 1.4.1.14	5 PROJECT ELEMENT TITLE Facility Projects	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000	

A. STATEMENT OF WORK

Work To Be Performed

The Facility Projects WBS element contains sub-projects to upgrade the K Basin Facility for safety and efficiency in supporting the additional personnel and increased activity that are expected during upcoming removal projects, to maintain and operate a Cold Test Facility, to reduce personnel dose in the K Basins, to remove fuel, sludge, and debris from the K Basins and to continue basin water treatment throughout the project.

For each sub-project, the work includes the functions and requirements specification, design, procurement, installation, acceptance testing, safety documentation, environmental compliance and permitting. The scope also includes the operations related activities to prepare procedures, train personnel and conduct operational readiness assessments/reviews, the operations cost for transportation of fuel or waste to the destination location, and the cost and interface with Hanford Site waste disposition facilities.

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The sub-projects included are: K Basins Facility Upgrades, Dose Reduction System, Fuel Retrieval, Sludge Removal, and Debris Removal, Integrated Water Treatment, and Deactivation Preparation.

Facility Upgrades - Included in this sub-project are activities to repair, replace and modify essential K Basins infrastructure to facilitate successful execution of Spent Fuel mission objectives, close out the project records for the roof repair activity, installation of MO-442 in 100K (completed FY96), modify and maintain a cold test facility for K Basin fuel, sludge and debris removal and dose reduction equipment development, acceptance testing and operator training, evaluate the needs and construct additional space for change rooms, clothing storage, lunch rooms, rest rooms, and office space to accommodate increased staff, and perform other facility modifications for fuel removal support. **Facility Upgrades for Cask Transportation - Construction** activities associated with preparing the South Transfer Areas in both KE and KW basins for the Cask Transportation System, and installation of same. Initial work will involve removing systems and structures that are no longer in use and upgrading the 30 ton cranes to allow for safe, efficient cask transportation operations. Other construction activities will be to install the immersion pail support structure and the Multi-canister overpack (MCO) loading system.

Dose Reduction System - Includes mitigation of dose from basin walls and mitigation of dose and dose management for K East and K West Basins for all of the basin projects. For basin wall dose mitigation, the basin walls will be cleaned and coated and the basin water level raised in 105 KE Basin (completed FY96). Dose management includes global ALARA planning based on dose assessments to help determine staffing requirements, and dose reduction equipment procurement for individual projects' operations. Additional dose reduction will be required for 105 KE Basin in FY 97 to reduce the dose received by the increased personnel expected in the basins during fuel re-racking. This will include hydrolasing of piping and equipment in high traffic areas, such as the transfer bay and dummy elevator pit, decontaminating of piping and equipment that is slated to be removed, and decontaminating and refinishing the concrete floors in both basins. A PA communication system will be installed in both KE Basin and KW Basin.

Fuel Retrieval - Acquisition and testing of the equipment to retrieve fuel canisters from storage bays, open (KW only), clean fuel elements to remove all unbonded sludge and corrosion particles and remove stuck fuel elements from canister. Fuel and fuel scrap loading in MCO tier baskets, and transfer of loaded tier baskets to a queue station for lag storage.

Sludge Removal - This sub-project provides systems to manage the sludge/sediment on the floor and in the pits of 105 KE and 105 KW Basins and any sludge/sediment contained in the fuel canisters, to remove/retrieve the sludge, to pre-treat/package the sludge, and to transfer the

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sludge for disposal. Sludge removal will be executed in two phases. The first phase consists of relocating sludge for temporary staging during fuel retrieval. The second phase consists of transferring sludge from staging to double shell tank at TWRS. Retrieval and disposal of KW floor sludge is not included in this scope, anticipating RL approval of the contractor level MOU between SNFP and Transition Projects.

Debris Removal - This sub-project includes removal of underwater debris from 105 KE and 105 KW Basins. Efforts will focus on moving and/or removing empty fuel canisters and clearing areas to facilitate fuel and sludge removal from the basins. Debris Removal activities include removing debris from the South Load Out Pit, cleaning and removing empty canisters from the basins prior to fuel processing and removal, and general debris removal.

Integrated Water Treatment - The Integrated Water Treatment System (IWTS) provides water filtration and treatment necessary to maintain water quality in the basins. It will upgrade and provide new water treatment systems and facilities for both the KE and KW basins. The IWTS will provide clean, treated, or fresh water and receive and treat contaminated water for the fuel, sludge, and debris removal systems, as well as the MCO/Cask system. The IWTS will provide treatment capability to maintain water clarity, remove decay heat, and maintain soluble and insoluble radionuclide concentrations in the basins as low as reasonably achievable during continued SNF storage and fuel and sludge removal activities. The IWTS will also install a system for canister sludge management during fuel removal. This system will put filter backwash material into the Weasel Pit.

The Sub-project Phase 1 elements are as follows:

Facility Upgrades

- Essential Systems (1.4.1.04.01.01)
- Cold Test Facility (1.4.1.04.01.05)
- Basin Personnel Facility Upgrades (1.4.1.04.01.07)
- Basin Facility Support Upgrades (1.4.1.04.01.08)
- Dose Reduction System (1.4.1.04.02.01)
- K Basin Facility Upgrades for Transport (1.4.1.06.01.08)

Fuel Retrieval

- FRS Technical Baseline (1.4.1.04.03.01)
- FRS Design (1.4.1.04.03.03)
- FRS Procurement/Fab/Construction (1.4.1.04.03.04)
- FRS Equipment Test (1.4.1.04.03.05)
- FRS Regulatory Compliance (1.4.1.04.03.06)

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FRS Project Management (1.4.1.04.03.02)

Sludge Removal

Sludge Removal System (1.4.1.04.04.01)

Debris Removal

Debris Removal Project (1.4.1.04.05.01)

Integrated Water System

Water Treatment System (1.4.1.04.06.01)

Deactivation Preparation (1.4.1.04.07.01)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

- Essential system upgrades to basin. This will include upgrades to the electrical system, maintenance facility and potable water system. Also provides minimal fire protection.
- Relocation of personnel trailers
- K Basins roof repairs (completed FY96)
- Availability of the Cold Test Facility for design development and operator training.
- Design, installation and readiness review of Fuel Removal Support Facilities.
- Dose Reduction associated with basin walls and piping. Also will include floor refinishing and superstructure decon.
- Fuel Retrieval System design, installation, safety analysis, preparation for operations, and Operational Readiness Review.
- Sludge Removal System design, installation, safety analysis, preparation for operations, and Operational Readiness Review.
- Debris Removal System design, installation, safety analysis, preparation for operations, and Operational Readiness Review.

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- Water Treatment System design, installation, safety analysis, preparation for operations, and Readiness Assessment.
- K Basin Facilities Turnover agreements/criteria

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14115
4 PROJECT ELEMENT CODE 1.4.1.15	5 PROJECT ELEMENT TITLE SNF Storage	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW7040000	

A. STATEMENT OF WORK

Work To Be Performed

The SNF Storage WBS Level 4 consists of three sub-projects: Cask/ Transportation System, Multi-Canister Overpack (MCO) Acquisition, and Other Hanford Fuel. Each sub-project is defined below.

Cask Transportation - The Cask/Transportation System encompasses acquisition of the transportation system and transportation casks to transfer the Multi-Canister Overpack (MCO's) from the K Basins to the Cold Vacuum Drying (CVD) station, provides the processing vessel and operating platform for CVD, and then transports the MCO's to the Canister Storage Building (CSB). The transportation system includes the casks, conveyances, ancillary equipment, and an immersion pail system required to preclude contamination of the

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cask package. The transportation system also includes acquisition of the MCO loading system which moves the loaded fuel baskets from the basins into the cask loadout and loads the baskets into the Cask/MCO.

The scope includes definition of performance specifications, design and fabrication procurement, safety analyses, qualification testing, acceptance testing, installation verification, and management systems. Also included are interface activities associated with modification of the Basin facilities to accommodate installation and operation of the cask/transportation system. Five Cask/Conveyance systems and two immersion pail systems are required.

The fuel load out and transportation training, readiness assessments/review and operations are contained in other WBS elements. Sludge, debris, and water transportation equipment are also contained in other WBS elements.

Multi-Canister Overpack (MCO) - The Multi-Canister Overpack (MCO) Acquisition encompasses acquisition of containers which will house the spent nuclear fuel during cold vacuum drying, transportation to the Canister Storage Building (CSB), staging at the CSB, hot conditioning, and interim storage at the CSB. 400 MCO's are estimated to be required. The scope includes the establishment of the MCO performance specification, design, process testing, acceptance testing, fabrication, procurement, safety documentation, and management systems. The MCO includes the shell, closure mechanism, and internal structures (fuel and scrap baskets), and internal provisions to accommodate the drying and conditioning processes.

The facilities, equipment, training, readiness assessment/reviews and operations to load and transport the MCO's are contained in other WBS elements.

Other Hanford Fuel - Other Hanford Fuel encompasses SNF Project activities necessary to attain safe interim storage of the SNF throughout the Hanford Site that is not currently stored at the K Basins and manage these materials in accordance with the SNF and INEL EIS Record of Decision and DOE/Navy/State of Idaho Consent Order. The SNF inventory in the 300 and 400 areas will be consolidated at the 400 Area Interim Storage Area (ISA), primarily with non-SNF Project funds. The SNF Project will fund certain activities to maintain the materials at the 400 Area ISA in accordance with approved project interface agreements. The 400 Area ISA SNF will later be transferred to a 200 Area ISA, which will include a pad provided under this WBS. T Plant SNF will be transferred to the CSB after emplacement of K Basins SNF at the CSB. Plans will be developed to repackage and interim store PFP and LLBG SNF. Sodium bonded FFTF SNF will be transloaded at the CSB into T-3 casks and transferred to INEL.

The scope includes acquisition of casks, safety analysis, transportation of fuel onsite, interim

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storage surveillance and security and transportation of the fuel offsite as prescribed by the interprogram MOUs. Work scope and associated costs after the endpoint defined by the Project Management Plan are included for information purposes only.

Other Hanford Fuel includes: Oregon State University reactor TRIGA fuel currently located at the Low Level Waste Burial Grounds; Shippingport PWR Core 2 fuel currently located at T Plant; Light Water Reactor fuel from the PNNL 324, 325, and 327 facilities; TRIGA fuel currently located at the 400 Area/ISA (previously at the 308 Facility Annex); FFTF fuel currently located at the FFTF; LAMPRE and University of Washington reactor fuel currently located at the PFP facility; and N Reactor fuel fragments in the N Basins sludge currently located at the N Basins.

The Sub-project Phase 1 elements are as follows:

MCO Acquisition

- MCO Acquisition Definition (1.4.1.05.01.01)
- MCO Project Management (1.4.1.05.01.02)
- Testing/Qualification MCO's (1.4.1.05.01.05)
- MCO Design (1.4.1.05.01.03)
- MCO Fabrication (1.4.1.05.01.04)
- MCO Topical Safety Report (1.4.1.05.01.06)

Cask/Transportation

- Cask/Transportation Project Management (1.4.1.06.01.02)
- Cask & Transportation System Design (1.4.1.06.01.03)
- Cask & Transportation System Fabrication (1.4.1.06.01.04)
- Cask/Transportation Regulatory Compliance (1.4.1.06.01.07)

Other Hanford Fuel

- FFTF (1.4.1.09.01.06)
- PNNL Labs, Buildings 324, 325, 327 (1.4.1.09.01.04)
- 308 Annex (1.4.1.09.01.05)

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FFP (1.4.1.09.01.07)
T Plant (1.4.1.09.01.03)
National Programs (1.4.1.01.01.07)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the sub-project):

Multi-Canister Overpack (MCO):

- Approve MCO Fabrication
- Approve MCO Topical Safety Report
- Issue MCO Design Review Report
- Critical Decision 3 for MCO fabrication
- Award MCO Fabrication Contract
- Receive First MCO
- Complete Fabrication and Delivery of MCOs

Cask/Transportation:

- Award Cask/Transport System Design and Fabrication Contract
- Complete Cask/Transportation Performance Testing
- Complete Cask/Transport System Design
- Complete/Issue Cask/Transportation SARP
- Critical Decision 3 for Cask Fabrication
- Complete Cask/Transportation System Fabrication
- Receive Cask/Transport Systems for Training
- Complete Cask/Operations Equipment Acceptance Test
- Complete MCO Loading System Acceptance Test

Other Hanford Fuel:

- The transfer of spent nuclear fuel located at T Plant, PNNL Labs, FFTF, and the 400 Area ISA to an interim storage pad located adjacent to the CSB in the 200 Area (or to the CSB in the case of SNF at T Plant)
- Operations and surveillance of the LWR and TRIGA SNF at the 400 Area
- Acquiring canisters and drying system for implementing dry storage of T Plant SNF
- Activities to investigate repackaging capability at the CSB for small SNF packages, until the SNF project is transferred to the successor organization
- Acquisition of sodium bonded FFTF transloading capability and associated SNF transfer to INEL

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14116
4 PROJECT ELEMENT CODE 1.4.1.16	5 PROJECT ELEMENT TITLE Canister Storage Building	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW704000 39EW70400	

A. STATEMENT OF WORK

Work To Be Performed

The Canister Storage Building (CSB) WBS Level 4 encompasses the acquisition to stage and store the spent nuclear fuel after removal from the basins. Scope of the WBS element also includes construction of the annex which will house the Hot Conditioning System (design of the annex is within Hot Conditioning WBS element). The facility is sized to storage 2,100 metric tons of fuel in a secure environment. The fuel is to be accommodated within one of three vaults to be constructed. The second and third vaults are to be partially prepared for optional storage of TWRS glass canisters. SNF will be loaded into MCO's at the 105K basins and transported to the CSB for staging after cold vacuum drying. The CSB provides staging of the fuel prior to hot conditioning at a co-located conditioning system. Following Hot Conditioning fuel will be returned to the CSB storage tubes where it will be placed, via a

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MCO Handling Machine (MHM), in storage. The facility has a design life of 40 years and will be designed with features to facilitate future life extension to 75 years with necessary refit and future upgrade of the CSB facility.

Under the mission of the SNF Project, the operation of the CSB is transferred to a facilities maintenance program in September 2001. Deactivation of the CSB is budgeted for, but will not be performed by the SNF Project.

Acquisition includes the definition of functions and requirements, design, procurement, construction, safety documentation, environmental compliance and permitting.

Project management includes, cost and schedule reporting, change control, administrative systems tasks, key decision process, ICE reviews, project validation, request for proposal, statement of work for design, construction, startup, and Quality Assurance program. Review and approve contractor submittals.

Prepare engineering trade studies in support of conceptual design and advanced conceptual design. Provide the Definitive Design for the CSB, including system and discipline drawings, vendor information, procurement specification, design calculations, design verification documents, and test procedures. Provide Title III Engineering and Inspection activities to assure that the project is constructed in accordance with the plans and specifications and that the quality of materials and workmanship is consistent with the requirements of the project.

Perform construction management, construction procurement, and construction of the CSB. The Fixed Price contractor shall build, inspect, and test the CSB based on the approved drawings and specifications supplied by the A-E.

Perform activities related to Environmental Documentation, Regulatory Compliance, and permitting. Activities include obtaining air and water permits, prepare NOC for DOH, and EPA approval. Development of the S/RIDs and the preparation of the Safety Analysis Report. Provide systematic identification of hazards with the CSB. Describe and analyze the adequacy of measures taken to eliminate, control, or mitigate identified hazards, analyze potential accidents and the associated risks.

Acquisition of the MCO handling machine to handle the MCOs from the transportation cask unload station to the storage tubes and Hot Conditioning System. This includes a gantry type crane with a cask, hoisting equipment and controls, and shield gate. This WBS item includes a Value Engineering review, proposal evaluation, design and fabrication support, and the design, fabrication and installation of the equipment.

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The Sub-Project Phase 1 elements are as follows:

Canister Storage Building

- CSB Acquisition Definition (1.4.1.07.01.01)
- CSB Project Management (1.4.1.07.01.02)
- CSB Design (1.4.1.07.01.03)
- CSB Construction (1.4.1.07.01.04)
- MHM Fabrication (1.4.1.07.01.07)
- CSB Regulatory Compliance (1.4.1.07.01.06)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the Sub-Project):

- Award Design Contract
- Definitive Design Report
- Safety Analysis Report
- Key Decisions 0, 1, 2, 3A (award construction, 3B (initiate construction)
- Critical Decisions 3 (Deck), 3A (Superstructure), and 3B (Systems), CD4.
- Construction Acceptance of Facility

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WBS LEVEL 4 DICTIONARY

WBS DICTIONARY		
1 PROJECT TITLE/PARTICIPANT Spent Nuclear Fuel Project	2 DATE January 14, 1997	3 IDENTIFICATION NO. 14117
4 PROJECT ELEMENT CODE 1.4.1.17	5 PROJECT ELEMENT TITLE Conditioning Projects	
6 INDEX LINE NO.	7 REVISION NO AND AUTHORIZATION 0	8 DATE
9 APPROVED CHANGES		
10 SYSTEM DESIGN DESCRIPTION	11 BUDGET AND REPORTING NUMBER EW704000 39EW70400	

A. STATEMENT OF WORK

Work To Be Performed

The Conditioning Acquisition will provide equipment to dry and condition spent nuclear fuel stored at K Basins. Conditioning the fuel will occur in two process steps, Cold Vacuum Drying (CVD) and Hot Conditioning (HC).

CVD will be performed in the 100K area near the K Basins and is required prior to both transportation to and staging in the Canister Storage Building (CSB). The process removes bulk water from the MCO by draining and then vacuum drying the contents. Removal of bulk water mitigates fuel corrosion and the associated production of hydrogen gas. This allows the MCO to be transferred to the CSB and staged while minimizing the threat of overheating or over pressurization.

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Hot Conditioning will be performed in an annex to the CSB and will prepare the fuel for interim dry storage. The construction of the annex includes the concrete slab and hot conditioning process pits, the superstructure, electrical power and lighting, and HVAC for the annex area. Annex construction is part of the CSB scope of work and is not included in this WBS. Included in this WBS is the development of the HC process, the design, procurement and installation of the HC process equipment, and the Quality Assurance, Safety Analysis and project management functions associated with it.

The HC process removes chemically bound water (hydrates) and uranium hydrides by applying a combination of heat (300C) and reduced pressure (1 torr). This minimizes the potential for pressurizing the MCO by removing the constituents that can change phase into a gaseous state. A partial oxidation step creates an oxide layer on the exposed uranium metal surfaces to reduce the reactivity of the fuel in the presence of air or other oxidants.

Hot Conditioning System Acquisition Definition includes the development and maintenance of the baseline documents including the Functions and Requirements and design specifications. It also includes the performance of trade studies, discipline reviews, the preparation and maintenance of interface documentation and the development of product and feed criteria.

Project management for CVD and HC includes cost, schedule and technical baseline control and reporting, change control, administrative systems tasks, critical decision process, definitive design, construction, and quality assurance.

The Design covers the development of the system and discipline drawings, vendor information, procurement specifications, design calculations, design verification documents and test procedures. It also includes prototype development and prototype testing.

Construction includes construction management, procurement, construction, equipment installation, and title III engineering.

Regulatory Compliance includes the development of the Safety Analysis Report, the Hazards Analysis, air permits and S/RIDs.

The Sub-Project Phase 1 elements are as follows:

Cold Vacuum Drying

- Cold Vacuum Drying System Project Management (1.4.1.08.03.03)
- Cold Vacuum Drying System Design (1.4.1.08.03.04)
- Cold Vacuum Drying System Construction (1.4.1.08.03.05)
- Cold Vacuum Drying System Regulatory Compliance (1.4.1.08.03.07)

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Hot Conditioning System

Hot Conditioning System Acquisition Definition (1.4.1.08.01.01)

Hot Conditioning System Project Management (1.4.1.08.01.03)

Hot Conditioning System Design (1.4.1.08.01.04)

Hot Conditioning System Construction (1.4.1.08.01.05)

Hot Conditioning System Regulatory Compliance (1.4.1.08.01.07)

Major end-item deliverables (related to milestones and interfaces appropriate to this level of the Sub-Project):

Major end-item deliverables for both Cold Vacuum Drying System and Hot Conditioning System Sub-Projects include:

- Award the Design Contract
- Complete Conceptual Design Report
- Complete Definitive Design Report
- Prepare Safety Analysis Report
- Complete Construction Acceptance of Facility

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
1.4.1				SPENT NUCLEAR FUEL PROJECT		FG HUDSON	0 SPENT NUCLEAR FUEL PROJECT
	1.4.1.00			PROJECT DIRECTION	1.4.1.00	NH WILLIAMS	FDH
	1.4.1.11			SAFETY & QUALITY		PG LeROY	1 SAFETY & QUALITY
			X	QA/ES&H	1.4.1.01.01.04	DW SMITH	1 SAFETY & QUALITY
			X	REGULATORY COMPLIANCE	1.4.1.01.01.05 1.4.1.01.01.06 1.4.1.01.01.08	C DeFIGH-PRICE	1 SAFETY & QUALITY
			X	CHARACTERIZATION	1.4.1.02.01.04	RP OMBERG	1 SAFETY & QUALITY
	1.4.1.12			PROJECT INTEGRATION		D.C. BEST	2 PROJECT INTEGRATION
			X	PROJECT INTEGRATION	1.4.1.01.01.01 1.4.1.01.01.02 1.4.1.01.01.03 1.4.1.01.01.09 1.4.1.02.01.01 1.4.1.02.01.02 1.4.1.02.01.03 1.4.1.02.01.07	DC BEST	2 PROJECT INTEGRATION
	1.4.1.13			OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
		1.4.1.13.01		K-BASINS O&M		DW SIDDOWNAY	3 OPERATIONS
			X	PROVIDE/ MAINTAIN K-BASIN BASELINE DOCUMENTATION	1.4.1.03.01.03	PG HUNTLEY	3 OPERATIONS
			X	FUEL RELOCATION/HCS COMMON OPERATIONS	1.4.1.03.01.06	CA THOMPSON	3 OPERATIONS

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
			X	K-BASINS O&M	1.4.1.03.01.01	JR GREGORY	3 OPERATIONS
			X	MAINTAIN K-BASINS	1.4.1.03.01.02	WC BARKER	3 OPERATIONS
			X	K-BASIN STAFF TRAINING	1.4.1.03.01.04	PG HUNTLEY	3 OPERATIONS
			X	K-BASIN MANAGEMENT	1.4.1.03.01.05	PG HUNTLEY	3 OPERATIONS
			X	TESTING & ORR OF TRANSPORTATION	1.4.1.06.01.06	CA THOMPSON	3 OPERATIONS
		1.4.1.13.02		FRS OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	FRS K-BASIN STARTUP/ TRAINING	1.4.1.04.03.07	CA THOMPSON	3 OPERATIONS
			X	FRS K-BASIN OPERATIONS	1.4.1.04.03.08	JR GREGORY	3 OPERATIONS
		1.4.1.13.03		DEBRIS REMOVAL OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	DEBRIS REMOVAL OPERATIONS	1.4.1.04.05.02	JR GREGORY	3 OPERATIONS
		1.4.1.13.04		CVD OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	COLD VACUUM DRYING FACILITY STARTUP & MSA	1.4.1.08.03.06	CA THOMPSON	3 OPERATIONS
			X	CVD OPERATIONS	1.4.1.08.04.01 1.4.1.08.04.02 1.4.1.08.04.06	CA THOMPSON	3 OPERATIONS
		1.4.1.13.05		WATER TREATMENT OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	WATER TREATMENT OPERATIONS	1.4.1.04.06.02	JR GREGORY	3 OPERATIONS

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
		1.4.1.13.06		SLUDGE REMOVAL OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	SLUDGE REMOVAL OPERATIONS	1.4.1.04.04.02	JR GREGORY	3 OPERATIONS
		1.4.1.13.07		HCS OPERATIONS		DW SIDDOWNAY	3 OPERATIONS
			X	HOT CONDITIONING SYSTEM STARTUP & ORR	1.4.1.08.01.06	CA THOMPSON	3 OPERATIONS
			X	HOT CONDITIONING SYSTEM OPERATIONS	1.4.1.08.02.01 1.4.1.08.02.02 1.4.1.08.02.03	CA THOMPSON	3 OPERATIONS
		1.4.1.13.08		CSB OPERATIONS		CA THOMPSON	3 OPERATIONS
			X	CSB STARTUP AND MSA	1.4.1.07.01.05	CA THOMPSON	3 OPERATIONS
			X	OPERATIONS OF CSB	1.4.1.07.02.01 1.4.1.07.02.02 1.4.1.07.02.03 1.4.1.07.02.04 1.4.1.07.02.05 1.4.1.07.02.06	CA THOMPSON	3 OPERATIONS
	1.4.1.14			FACILITY PROJECTS		RJ LODWICK	4 FACILITY PROJECTS
		1.4.1.14.01		FACILITY UPGRADES		MJ WIEMERS	4 FACILITY PROJECTS
			X	ESSENTIAL SYSTEMS	1.4.1.04.01.01	DL CHASE	4 FACILITY PROJECTS
			X	COLD TEST FACILITY	1.4.1.04.01.05	DR PRECECHTEL	4 FACILITY PROJECTS
			X	BASIN PERSONNEL FACILITY UPGRADES	1.4.1.04.01.07	MV SCOTT	4 FACILITY PROJECTS

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
			X	BASIN FACILITY SUPPORT UPGRADES	1.4.1.04.01.08	MV SCOTT	4 FACILITY PROJECTS
			X	DOSE REDUCTION SYSTEM	1.4.1.04.02.01	FW MOORE	4 FACILITY PROJECTS
			X	K BASIN FACILITY UPGRADES FOR TRANSPORT	1.4.1.06.01.08	KE ARD	4 FACILITY PROJECTS
			X	DEACTIVATION PREPARATION	1.4.1.04.07.01	DL CHASE	4 FACILITY PROJECTS
		1.4.1.14.02		FUEL RETRIEVAL		BS CARLISLE	4 FACILITY PROJECTS
			X	FRS TECHNICAL BASELINE	1.4.1.04.03.01	EJ SHEN	4 FACILITY PROJECTS
			X	FRS DESIGN	1.4.1.04.03.03	BS CARLISLE	4 FACILITY PROJECTS
			X	FRS PROC/ FAB/CONSTRUCTION	1.4.1.04.03.04	BS CARLISLE	4 FACILITY PROJECTS
			X	FRS EQUIPMENT TEST	1.4.1.04.03.05	EJ SHEN	4 FACILITY PROJECTS
			X	FRS REGULATORY COMPLIANCE	1.4.1.04.03.06	BS CARLISLE	4 FACILITY PROJECTS
			X	FRS PROJECT MANAGEMENT	1.4.1.04.03.02	BS CARLISLE	4 FACILITY PROJECTS
		1.4.1.14.03		SLUDGE REMOVAL		CJ ALDERMAN	4 FACILITY PROJECTS
			X	SLUDGE REMOVAL SYSTEM	1.4.1.04.04.01	FJ MULLER	4 FACILITY PROJECTS
		1.4.1.14.04		DEBRIS REMOVAL		CJ ALDERMAN	4 FACILITY PROJECTS
			X	DEBRIS REMOVAL PROJECT	1.4.1.04.05.01	JB CRYSTAL	4 FACILITY PROJECTS
		1.4.1.14.05		INTEGRATED WATER SYSTEM		CJ ALDERMAN	4 FACILITY PROJECTS

**SPENT NUCLEAR FUEL PROJECT
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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
			X	WATER TREATMENT SYSTEM	1.4.1.04.06.01	DS TAKASUMI	4 FACILITY PROJECTS
	1.4.1.15			SNF STORAGE		RW RASMUSSEN	5 SNF STORAGE
		1.4.1.15.01		MCO		RW RASMUSSEN	5 SNF STORAGE
			X	MCO ACQUISITION DEFINITION	1.4.1.05.01.01	KE SMITH	5 SNF STORAGE
			X	MCO PROJECT MANAGEMENT	1.4.1.05.01.02	KE SMITH	5 SNF STORAGE
			X	TESTING/ QUALIFICATION MCOS	1.4.1.05.01.05	KE SMITH	5 SNF STORAGE
			X	MCO DESIGN	1.4.1.05.01.03	KE SMITH	5 SNF STORAGE
			X	MCO FABRICATION	1.4.1.05.01.04	KE SMITH	5 SNF STORAGE
			X	MCO TOPICAL SAFETY REPORT	1.4.1.05.01.06	C DEFIGH-PRICE	5 SNF STORAGE
		1.4.1.15.02		CASK/TRANSPORT ATION		RW RASMUSSEN	5 SNF STORAGE
			X	CASK/TRANS PROJECT MANAGEMENT	1.4.1.06.01.02	RW RASMUSSEN	5 SNF STORAGE
			X	CASK/TRANS DESIGN	1.4.1.06.01.03	RW RASMUSSEN	5 SNF STORAGE
			X	CASK/TRANS SYSTEM FABRICATION	1.4.1.06.01.04	RW RASMUSSEN	5 SNF STORAGE
			X	CASK/TRANS REGULATORY COMPLIANCE	1.4.1.06.01.07	C DEFIGH-PRICE	5 SNF STORAGE
		1.4.1.15.03		OTHER HANFORD FUEL		RW RASMUSSEN	5 SNF STORAGE

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
			X	FFTF	1.4.1.09.01.06	RL MCCORMACK	5 SNF STORAGE
			X	PNNL LABS, BUILDINGS 324, 325, 327	1.4.1.09.01.04	RL MCCORMACK	5 SNF STORAGE
			X	308 ANNEX	1.4.1.09.01.05	RL MCCORMACK	5 SNF STORAGE
			X	PFP	1.4.1.09.01.07	RL MCCORMACK	5 SNF STORAGE
			X	T-PLANT	1.4.1.09.01.03	RL MCCORMACK	5 SNF STORAGE
			X	NATIONAL PROGRAMS	1.4.1.01.01.07	RL MCCORMACK	5 SNF STORAGE
			X	BURIAL GROUNDS NOT USED	1.4.1.09.01.02	RL MCCORMACK	5 SNF STORAGE
			X	N BASIN FUEL NOT USED	1.4.1.09.01.08	RL MCCORMACK	5 SNF STORAGE
	1.4.1.16			CSB		AS DAUGHTRIDGE	6 CSB
		1.4.1.16.01		CANISTER STORAGE BUILDING		AS DAUGHTRIDGE	6 CSB
			X	CSB PROJECT MANAGEMENT	1.4.1.07.01.02	AS DAUGHTRIDGE	6 CSB
			X	CSB DESIGN	1.4.1.07.01.03	GD BAZINET (SESC)	6 CSB
			X	CSB CONSTRUCTION	1.4.1.07.01.04	JH MORTIMER (FDNW)	6 CSB
			X	MHM FABRICATION	1.4.1.07.01.07	MK MAHAFFEY	6 CSB
			X	CSB REGULATORY COMPLIANCE	1.4.1.07.01.06	C DEFIGH-PRICE	6 CSB

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

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**Table 2.3
WORK BREAKDOWN
STRUCTURE INDEX AND PROGRAMMATIC
RESPONSIBILITY ASSIGNMENT MATRIX**

WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
	1.4.1.17			CONDITIONING PROJECTS		PM BOURLARD	7 CONDITIONING PROJECTS
		1.4.1.17.01		COLD VACUUM DRYING		JE FILIP	7 CONDITIONING PROJECTS
			X	CVD FACILITY PROJECT MANAGEMENT	1.4.1.08.03.03	JE FILIP	7 CONDITIONING PROJECTS
			X	CVD FACILITY DESIGN	1.4.1.08.03.04	JE FILIP	7 CONDITIONING PROJECTS
			X	CVD FACILITY CONSTRUCTION	1.4.1.08.03.05	JE FILIP	7 CONDITIONING PROJECTS
			X	COLD VACUUM DRYING FACILITY REGULATORY COMPLIANCE	1.4.1.08.03.07	C DEFIGH-PRICE	7 CONDITIONING PROJECTS
		1.4.1.17.02		HOT CONDITIONING SYSTEM		FW BRADSHAW	7 CONDITIONING PROJECTS
			X	HOT CONDITIONING SYSTEM ACQUISITION DEFINITION	1.4.1.08.01.01	FW BRADSHAW	7 CONDITIONING PROJECTS
			X	HOT CONDITIONING SYSTEM PROJECT MGMT	1.4.1.08.01.03	FW BRADSHAW	7 CONDITIONING PROJECTS
			X	HOT CONDITIONING SYSTEM DESIGN	1.4.1.08.01.04	FW BRADSHAW	7 CONDITIONING PROJECTS
			X	HCS CONSTRUCTION	1.4.1.08.01.05	FW BRADSHAW	7 CONDITIONING PROJECTS
			X	HCS REGULATORY COMPLIANCE	1.4.1.08.01.07	C DEFIGH-PRICE	7 CONDITIONING PROJECTS

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

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Table 2.3 WORK BREAKDOWN STRUCTURE INDEX AND PROGRAMMATIC RESPONSIBILITY ASSIGNMENT MATRIX							
WBS PROGRAM ELEMENT	WBS LEVEL# 4	WBS LEVEL #5 (Schedule Level 1)	Schedule LEVEL #2	TITLE	WBS LEVEL 6 COST ACCOUNT	RESPONSIBLE MANAGER	RESPONSIBLE ORGANIZATION
				NOT USED	1.4.1.02.01.05 1.4.1.04.01.06 1.4.1.08.01.02 1.4.1.08.03.02		

Program Master Baseline Schedule

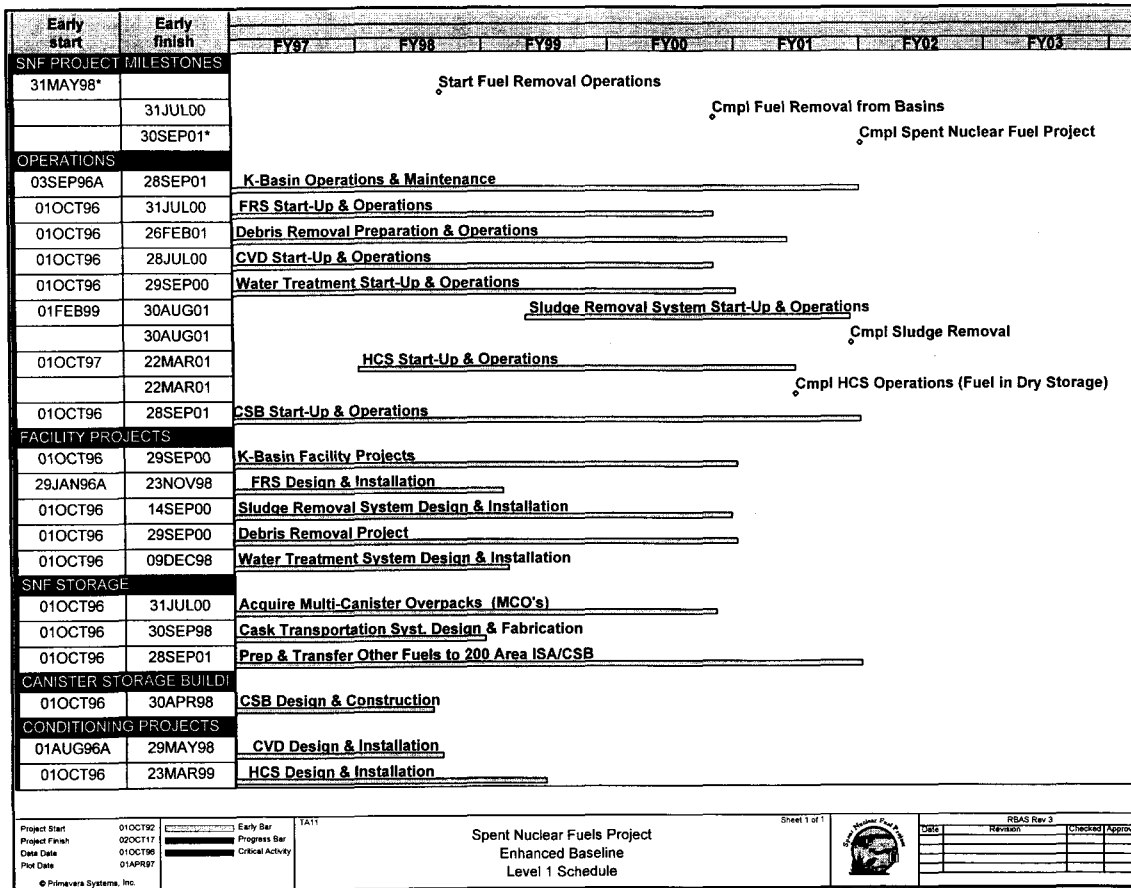
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WBS 1.4.1

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3-2-1



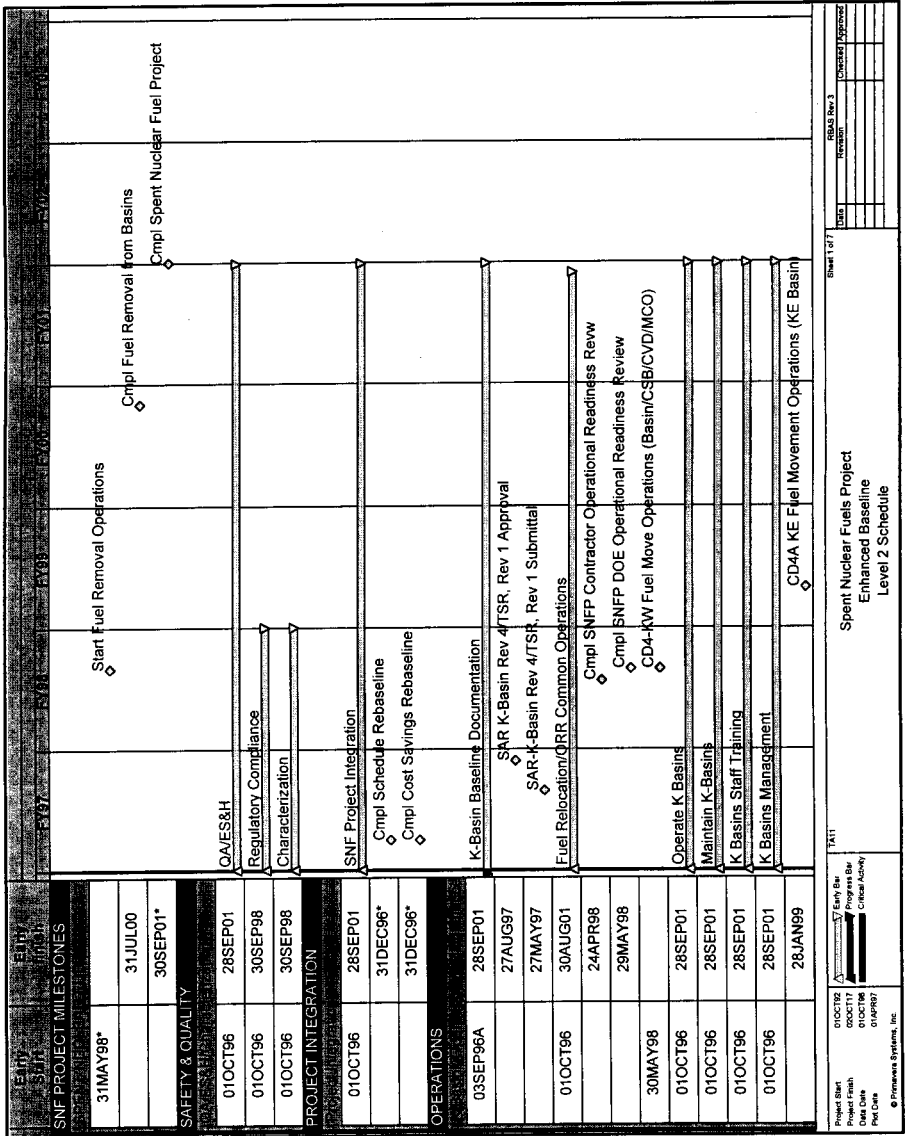
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WBS 1.4.1

HNF-SP-1104, Rev 4

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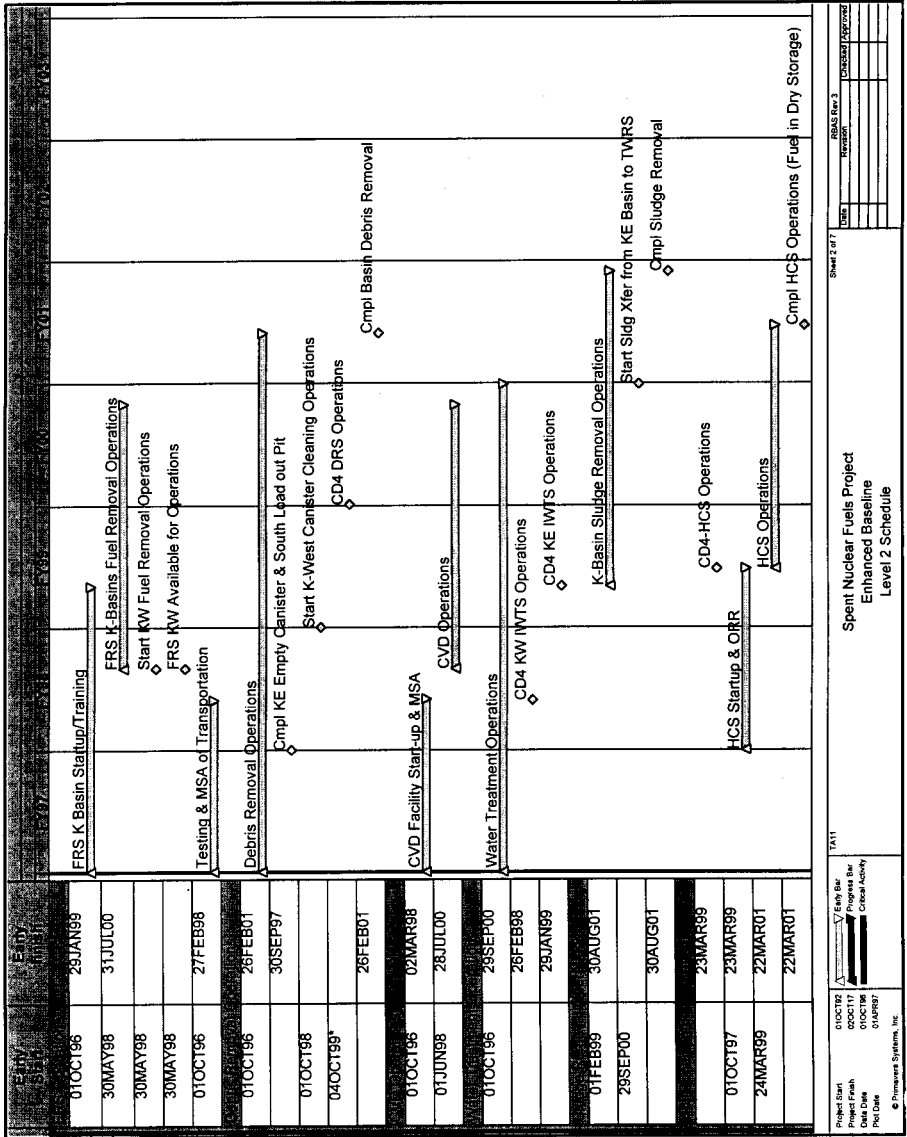
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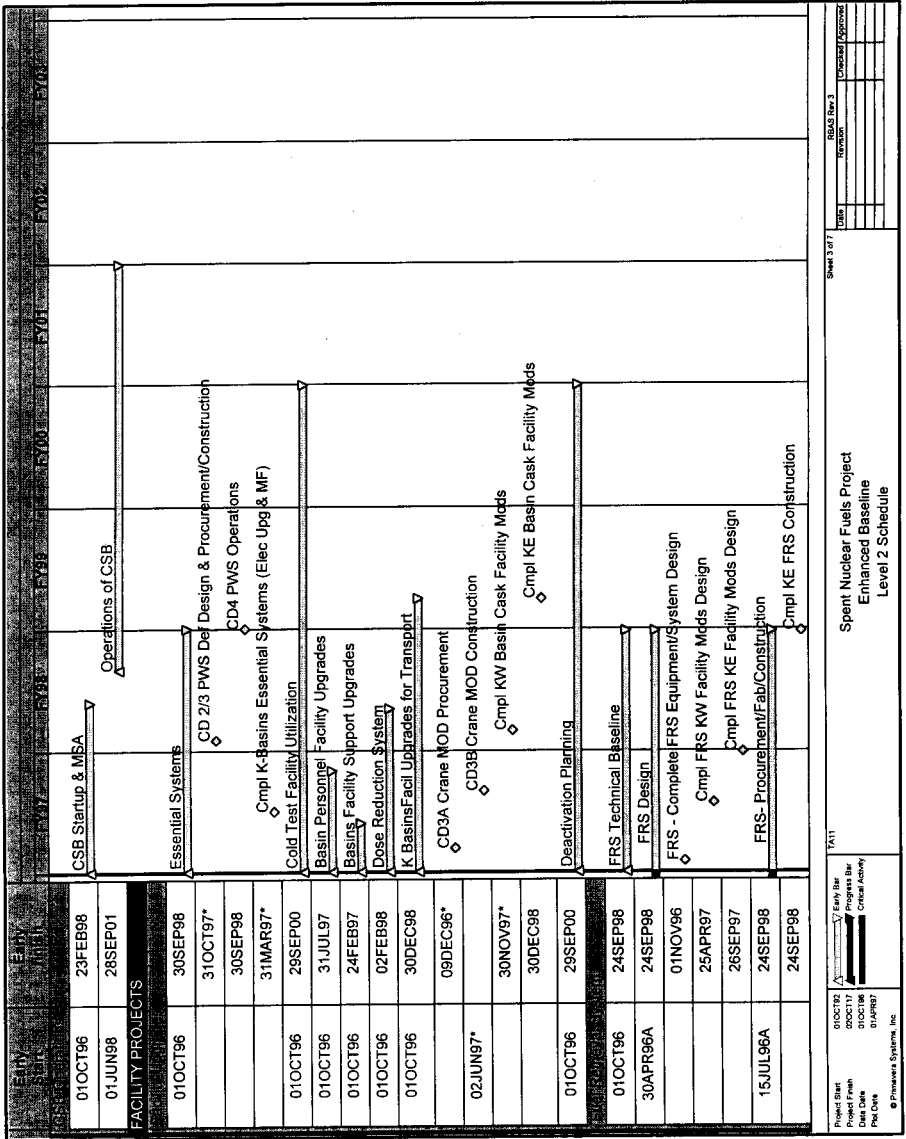
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SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

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USER	REVISION	CHECKED	APPROVED

Sheet 3 of 7

Spent Nuclear Fuels Project
Enhanced Baseline
Level 2 Schedule

AT1

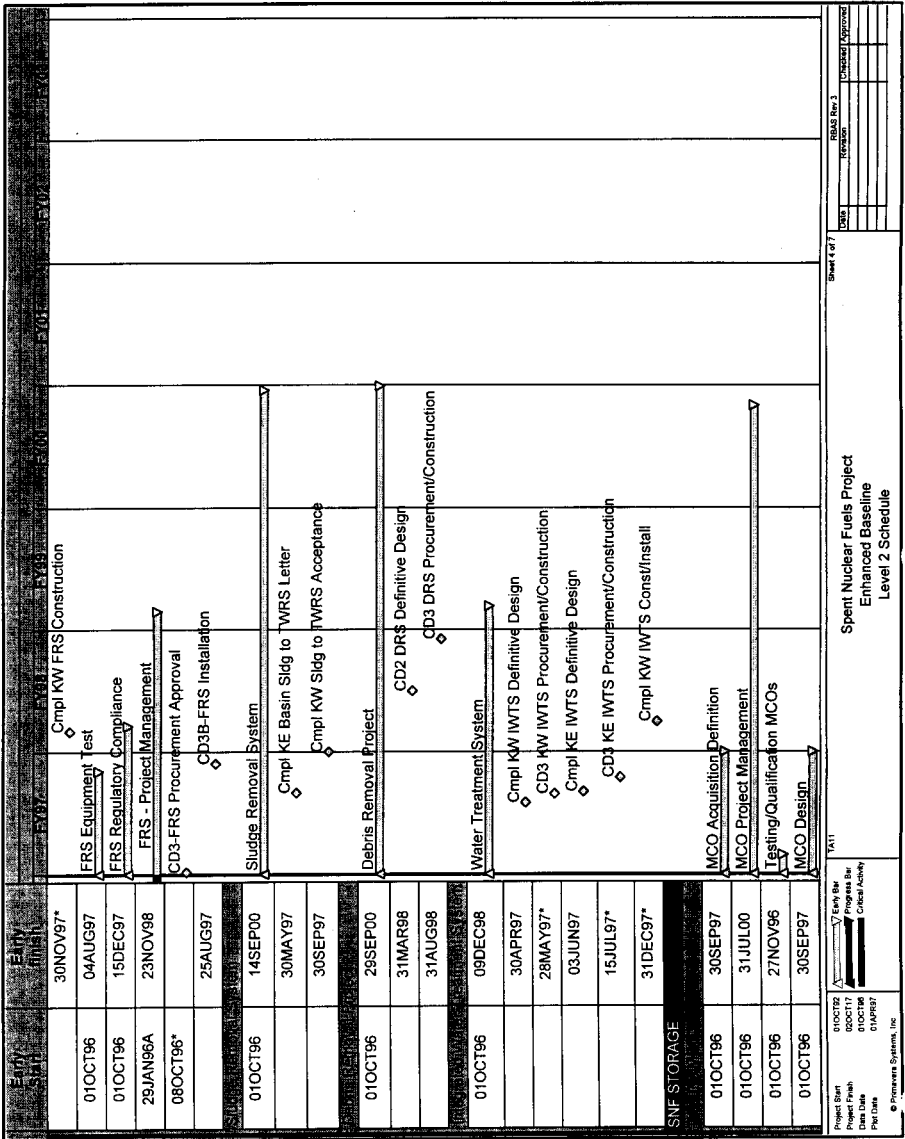
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 02OCT17 Project Finish
 01OCT96 Date Data
 01APR97 File Date

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SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

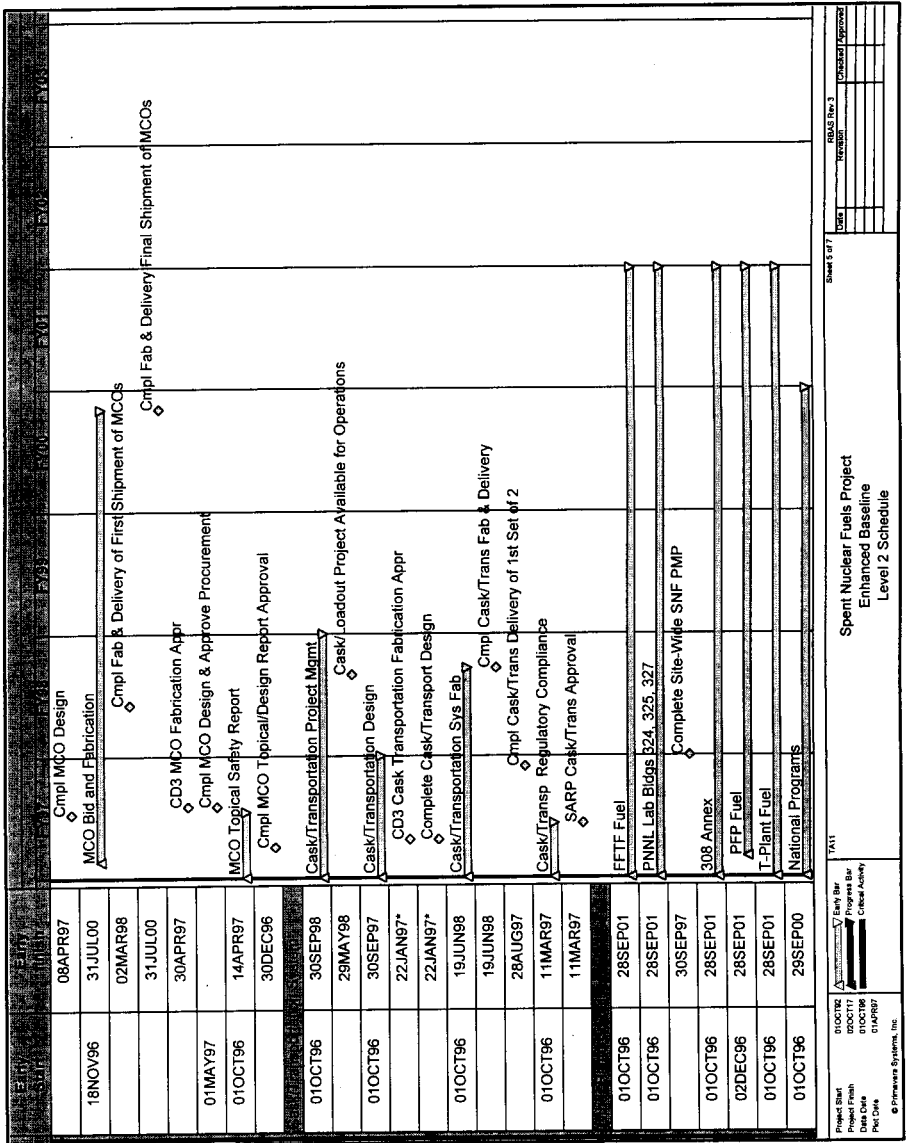
HNF-SP-1104, Rev 4



SPENT NUCLEAR FUEL PROJECT

WBS 1.4.1

HNF-SP-1104, Rev 4



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 Project Finish: 02OCT11
 Date Date: 01APR97
 File Date: 01APR97

Task: Spent Nuclear Fuels Project
 Enhanced Baseline
 Level 2 Schedule

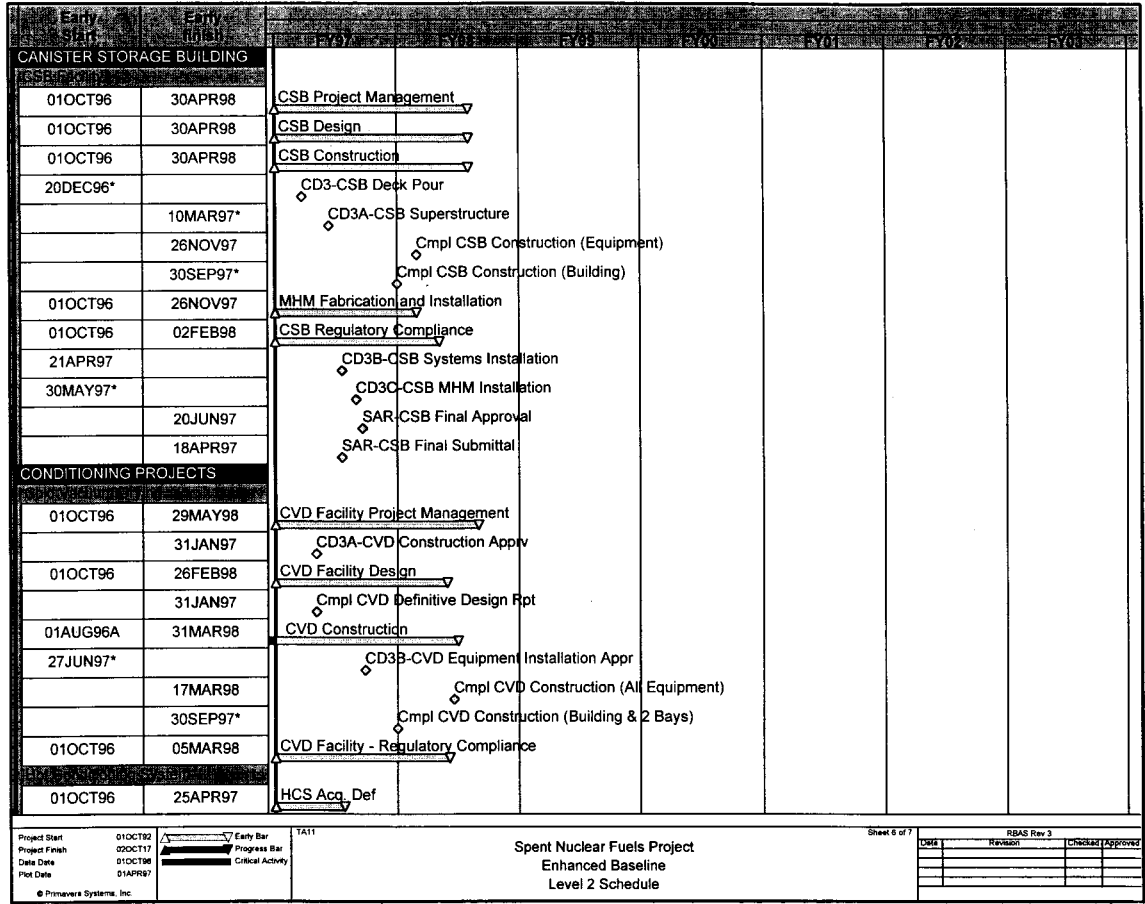
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Sheet 1 of 7
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SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1

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3.3-6

Project Start 01OCT92
 Project Finish 02OCT17
 Data Date 01OCT98
 PWS Date 01APR97

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T411

Spent Nuclear Fuels Project
 Enhanced Baseline
 Level 2 Schedule

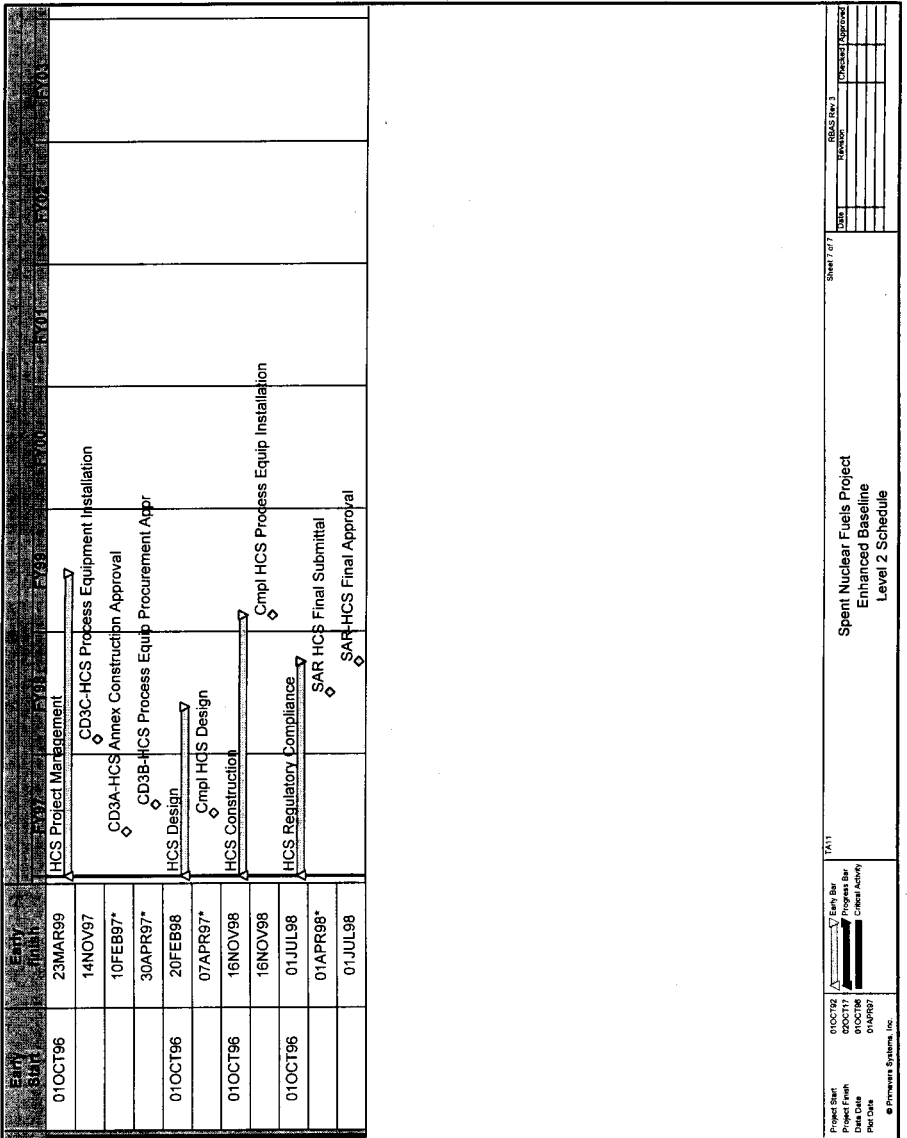
Sheet 6 of 7

RBAS Rev 3

Date	Revision	Checked	Approved

SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

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Project Start: 01OCT96
 Project End: 01OCT98
 Date Date: 01OCT96
 Plot Date: 01APR97

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Sheet 7 of 7

Spent Nuclear Fuels Project
 Enhanced Baseline
 Level 2 Schedule

DATE: _____
 PREPARED BY: _____
 CHECKED BY: _____
 APPROVED BY: _____

SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1

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**TABLE 3.4-1
MILESTONE LIST by Date
FY 1997 - PROJECT COMPLETION**

Milestone #	Title	Milestone Type						Criteria Definition*		DATE	
		TPA	DNFSB	HQ	VA	PA	RL	Proj	Source		"D" Type
S04-97-350	CD3 FRS Procurement Approval							X	M	10/8/96	
S04-97-515	Complete FRS Equipment / System Design	X						X	D	11/1/96	
S06-97-020	CD3A Crane MOD Procurement							X	N/A	12/9/96	
S07-97-046	CD3 CSB Deck Pour							X	M	12/20/96	
S05-97-004	Complete MCO Topical / Design Report Approval							X	D	12/30/96	
PA 5.1.1	Complete Schedule Rebaseline					X	X	X	P	12/31/96	
PA 5.1.2	Complete Cost Savings Rebaseline					X	X	X	P	12/31/96	
S06-97-011	CD3 Cask Transportation Fabrication Approval							X	M	1/22/97	
PA 1.3.1	Complete Cask/Trans Design			X	X	X	X	X	P	1/22/97	
S08-97-007	CD3A CVD Construction Approval							X	M	1/31/97	
S08-97-006	Complete CVD Definitive Design Report			X		X	X	X	D	1/31/97	
S08-97-012	CD3A HCS Annex Construction Approval							X	M	2/10/97	
S06-97-005	SARP Cask/Trans Approval							X	D	3/11/97	
S04-97-104	Complete K-Basins Essential Systems (elec upgrade & MF)							X	D	3/31/97	
PA 2.2.1	Complete HCS Design					X	X	X	P	4/7/97	
S05-97-007	Complete MCO Design				X		X	X	D	4/8/97	
S07-97-054	SAR CSB Final Submittal		X				X	X	D	D-04	4/18/97
S07-97-047	CD3B CSB Systems Installation							X	M	4/21/97	
S04-97-347	Complete FRS KW Facility Mods Design				X		X	X	D	D-01	4/25/97
S04-97-613	Complete KW IWTS Definitive Design							X	D	D-02	4/30/97
S05-97-011	CD3 MCO Fabrication Approval							X	M	4/30/97	
S08-97-008	CD3B HCS Process Equip Procurement Approval							X	M	4/30/97	
PA 1.3.2	Complete MCO Design & Approve Procurement					X	X	X	P	5/1/97	
S03-97-052	SAR K-Basin Rev 4/TSR, Rev 1 Submittal		X					X	D	5/27/97	
S04-97-609	CD3 KW IWTS Procurement / Construction							X	M	5/28/97	
PA 3.1.1	Complete KE Basin Sludge to TWRS letter					X	X	X	P	5/30/97	
S07-97-048	CD3C CSB MHM Installation							X	M	5/30/97	
S06-97-021	CD3B Crane MOD Construction							X	M	6/2/97	
S04-97-615	Complete KE IWTS Definitive Design							X	D	D-02	6/3/97
S07-97-053	SAR CSB Final Approval		X				X	X	S	6/20/97	
S08-97-020	CD3B CVD Equipment Installation Approval							X	M	6/27/97	

*Criteria Definition:

S = Stakeholder Document (TPA, DNFSB, VA)

P = Performance Agreement

M = Milestone Description Sheet

D = Dictionary Definition

(In definition process, examples attached)

**TABLE 3.4-1
MILESTONE LIST by Date
FY 1997 - PROJECT COMPLETION**

Milestone #	Title	Milestone Type							Criteria Definition*		DATE
		TPA	DNFSB	HQ	VA	PA	RE	Proj	Source	"D" Type	
S04-97-616	CD3 KE IWTS Procurement / Construction							X	M		7/15/97
S04-97-352	CD3B FRS Installation							X	M		8/25/97
S03-97-055	SAR K-Basin Rev 4/TSR, Rev 1 Approval	X					X	X	S		8/27/97
S06-97-050	Complete Cask/Trans Delivery of 1st Set of 2							X	D		8/28/97
S04-97-348	Complete FRS KE Facility Mods Design				X		X	X	D	D-01	9/26/97
PA 3.1.1	Complete KW Sldg to TWRS Acceptance					X	X	X	P		9/30/97
PA 3.1.2	Complete KE Empty Canister & South Load Out Pit					X	X	X	P		9/30/97
PA 1.2.1	Complete CSB Construction (Building)					X	X	X	P		9/30/97
PA 1.4.1	Complete CVD Construction (Building & 2 bays)					X	X	X	P		9/30/97
PA 4.1.1	Complete Site-Wide SNF PMP					X	X	X	P		9/30/97
S04-98-105	CD2/3 PWS Definitive Design & Procurement / Construction							X	M		10/31/97
S08-98-025	CD3C HCS Process Equipment Installation							X	M		11/14/97
S07-98-050	Complete CSB Construction (Equipment)							X	D		11/26/97
PA 1.1.1	Complete KW FRS Construction	X				X	X	X	P		11/30/97
PA 1.1.2	Complete KW Basin Cask Facility Mods					X	X	X	P		11/30/97
PA 1.1.4	Complete KW IWTS Construction /Installation	X				X	X	X	P		12/31/97
S04-98-607	CD4 KW IWTS Operations							X	M		2/26/98
S05-98-010	Complete Fab & Delivery First Shipment of MCO's							X	D	D-03	3/2/98
S08-97-220	Complete CVD Construction (all equipment)							X	D		3/17/98
S04-98-510	CD2 DRS Definitive Design							X	M		3/31/98
S08-98-020	SAR HCS Final Submittal							X	D	D-04	4/1/98
S03-98-602	Complete SNFP Contractor Operations Readiness Review		X				X	X	S		4/24/98
S03-98-625	Complete SNFP DOE Operations Readiness Review		X				X	X	S		5/29/98
S03-98-620	CD4 Fuel Movement Operations (KW) CSB, CVD, FRS		X		X		X	X	M		5/30/98
PA 1.1.3	KW-ET, MCO & Core Mods Start Fuel Removal Operations	X	X	X		X	X	X	P		5/31/98
S06-98-006	Complete Cask/Trans Fabrication & Delivery							X	D		6/19/98
S08-98-018	SAR HCS Final Approval							X	D	D-04	7/1/98
S04-98-511	CD3 DRS Procurement / Construction							X	M		8/31/98
S04-97-101	CD4 PWS Operations							X	M		9/30/98
S04-98-356	Complete KE FRS Construction	X					X	X	S		9/24/98

*Criteria Definition:

S = Stakeholder Document (TPA, DNFSB, VA)

P = Performance Agreement

M = Milestone Description Sheet

D = Dictionary Definition

(In definition process, examples attached)

**TABLE 3.4-1
MILESTONE LIST by Date
FY 1997 - PROJECT COMPLETION**

Milestone #	Title	Milestone Type							Criteria Definition*			
		TPA	DNFSB	RQ	VA	PA	RL	Proj	Source	D ^o	Type	DATE
S08-98-009	Complete HCS Process Equipment Installation							X	D			11/16/98
S04-97-621	Complete KE IWTS ATP					X	X	X	S			12/9/98
S06-97-012	Complete KE Basin Cask Facility Mods							X	D			12/30/98
S04-99-510	CD4A Fuel Movement Operations (KE)							X	M			1/28/99
S04-98-608	CD4 KE IWTS Operations							X	M			1/29/99
S08-98-013	CD4 HCS Operations							X	M			3/23/99
S04-00-520	CD4 DRS Operations							X	M			10/4/99
S00-00-902	Complete Fuel Removal from Basins	X	X	X	X			X	X	S		7/31/00
S05-99-001	Complete Fab & Delivery Final Shipment of MCO's							X	D	D-03		7/31/00
S04-00-205	Start Sludge Transfer from KE-Basin to TWRS	X	X					X	X	S		9/29/00
S04-01-507	Complete Basin Debris Removal	X						X	X	S		2/26/01
S08-02-001	Complete HCS Operations (Fuel in Dry Storage)							X	X	D		3/22/01
S04-01-215	Complete Sludge Removal	X	X	X	X			X	X	S		8/30/01
S00-01-909	Complete Spent Nuclear Fuel Project			X				X	X	D		9/30/01
S07-97-044	CD3A CSB Superstructure							X	M			3/10/97

*Criteria Definition:
 S = Stakeholder Document (TPA, DNFSB, VA)
 P = Performance Agreement
 M = Milestone Description Sheet
 D = Dictionary Definition
 (In definition process, examples attached)

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

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DRAFT ONLY - EXAMPLE PURPOSES
Dictionary Definition

Def Type	Title	Description of what constitutes completion of this milestone	Applicable Milestone #
D-01	Facility Design	This milestone is complete when FDNW transmits final design drawings and specifications necessary to procure, fabricate and install the equipment and hardware to DESH. ATP's to be prepared under/during Title III Engineering during construction. (Drawings)	S04-97-347 S04-97-348
D-02	Definitive Design	Completion of approved design media as described above and transmitted to K Basin Projects. (Drawings and Other)	S04-97-613 S04-97-613
D-03	Fab & Delivery Shipment MCO's	Receipt of shipment at warehousing. (Other)	S05-98-010 S05-99-001
D-04	SAR Final Submittal	This milestone is complete when DESH approves and submits the SAR to DOE-RL. (Letter)	S07-97-026 S07-98-018

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TABLE 3.4-2
MILESTONE LIST
THROUGH FY 1996

Milestone Type	Reference Number	Milestone Description	Milestone Completion Date
DOE-RL	S02-96-105	ISSUE FY 1996 TECHNICAL BASELINE DOCUMENT (OAF C.1)	15NOV95
DOE-RL	S07-96-010	START DEFINITIVE DESIGN - CANISTER STORAGE BUILDING	27NOV95
DOE-RL	S04-96-600	COMPLETE K EAST BASIN FILTRATION UPGRADES (PBF 96-208)	08DEC95
DOE-RL	S04-96-505	START CLEANUP DEBRIS AT SOUTH LOAD-OUT PIT (OAF C.2)	12DEC95
DOE-RL	S02-96-430	COMPLETE ANALYSIS PRELIMINARY REPORT OF KE FLOOR SLUDGE COMPOSITION (PBF 96-212)	22DEC95
DOE-RL	S04-96-609	TRANSMIT KW BASIN AIR PERMIT NOC WRITTEN APPLICATION TO WDOH (EPA APPROVE NOC) (OAF C.4)	22DEC95
DOE-RL	S03-96-039	COMPLETE K BASIN TIM RESOLUTION (OAF C.5)	29DEC95
DOE-RL	S06-96-001	AWARD CASK/TRANSPORTATION DESIGN PURCHASE ORDER (OAF C.3)	08JAN96
DOE-RL	S01-96-907	SUBMIT CHANGE REQUEST FOR SNFP INITIATION OF IPS (PBF 96-214)	15JAN96
DOE-RL	S04-96-101	ELEC SYSTEM DEFINITIVE DESIGN COMPLETE - ESSENTIAL SYSTEMS RECOVERY (PBF 96-207)	06FEB96
DOE-RL	S05-96-006	COMPLETE MULTI-CANISTER OVERPACK (MCO) PHASE 1 DESIGN (PBF 96-209)	10FEB96
DOE-RL	S04-96-104	MAINTENANCE FACILITY DEFINITIVE DESIGN COMPLETE - ESSENTIAL SYSTEMS RECOVERY (PBF 96-213)	16FEB96
DOE-RL	S08-96-002	SUBMIT FINAL PRODUCT CRITERIA (OAF C.9)	28FEB96
DOE-RL	S02-96-110	COMPLETE CONDUCT SNFP SYSTEMS REQUIREMENTS REVIEW (OAF C.6)	29FEB96
DOE-RL	S04-96-608	SUBMIT K BASIN SPENT FILTER ECO ROK OVERPACK SARP - RL FOR INFO - WATER TREAT SYS (OAF C.7)	29FEB96
DOE-RL	S04-96-502	COMPLETE SOUTH LOADOUT PIT CLEANUP - DEBRIS REMOVAL SYSTEM (PBF 96-201)	08MAR96
DOE-RL	S09-96-906	PROVIDE SCHEDULE FOR DISPOSITION OF OTHER HANFORD SNF	15MAR96
DOE-RL	S07-96-025	RECEIVE NOTICE TO PROCEED ON RESUMPTION OF CSB SUBSTRUCTURE (PBF-96-203)	22MAR96
DOE-RL	S07-96-031	APPROVE VAULT CONSTRUCTION PACKAGE - CSB (PBF 96-217)	22MAR96
DOE-RL	S03-96-049	UPDATE K BASINS MAINTENANCE IMPLEMENTATION PLAN (MIP) (OAF C.11)	26MAR96

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TABLE 3.4-2
MILESTONE LIST
THROUGH FY 1996

Milestone Type	Reference Number	Milestone Description	Milestone Completion Date
DOE-RL	S08-96-003	PROVIDE INPUT TO TECHNICAL REQUIREMENTS FOR DESIGN - CONDITIONING (OAF C.10)	28MAR96
DOE-RL	S03-96-048	COMPLETE K BASINS ESSENTIAL DRAWINGS AND SYS DESCRIPTION (PBF 96-206)	29MAR96
DOE-RL	S08-96-008	COMPLETE CONCEPTUAL DESIGN REPORT FOR COLD VACUUM DRYING SYSTEM (PBF 96-215)	29MAR96
DOE-RL	S04-96-107	OBTAIN SLDG MOU SIGN BY TWRS, SNFP (MHC), & TWRS & SFD (RL) - SLUDG REMOVE SYS (OAF C.12)	29MAR96
DOE-RL	S02-96-225	ISSUE SNF PROCESS FLOW DIAGRAM	31MAR96
DOE-RL	S04-96-340	START FRS FINAL DESIGN - CD 1/2	01APR96
DOE-RL	S02-96-466	327 FACILITY APPROVED FOR RECEIPT KE FUEL AND CANISTER SLUDGE	01APR96
DOE-RL	S08-96-004	SUBMIT REV. 0 PERFORMANCE SPECIFICATIONS FOR COLD VACUUM DRYING SYSTEM	01APR96
DOE-RL	S08-96-005	START DEFINITIVE DESIGN FOR COLD VACUUM DRYING SYSTEM	01APR96
DOE-RL	S08-96-010	CRITICAL DECISION (CD-1/2) TO PROCEED WITH DEFINITIVE DESIGN OF THE CVD FACILITY	01APR96
DOE-RL	S06-96-005	COMPLETE CASK PRELIMINARY DESIGN (PBF 96-202)	25APR96
DOE-RL	S01-96-111	ISSUE THE FY 1998 ACTIVITIES DATA SHEETS	29APR96
DOE-RL	S04-96-325	FRS - PROJECT MANAGEMENT PLAN	01MAY96
DOE-RL	S04-96-333	SUBMIT FRS CONCEPTUAL DESIGN REPORT TO DOE (PBF 96-211)	07MAY96
DOE-RL	S06-96-007	DEVELOP CASK/TRANSPORTATION DRAFT SAFETY ANALYSIS REPORT FOR PACKAGING (SARP)	16MAY96
DOE-RL	S07-96-015	START OF PROCUREMENT - CSB	29MAY96
DOE-RL	S02-96-415	COMPLETE SHIPMENT OF KE FUEL AND CANISTER SLUDGE TO HOT CELL (PBF 96-210)	31MAY96
DOE-RL	S05-96-007	COMPLETE MCO TESTING (OAF)	31MAY96
DOE-RL	S04-96-204	CLEAN AND PAINT BASIN WALLS COMPLETE - DOSE REDUCTION (PBF 96-205)	17JUN96
DOE-RL	S02-96-425	ISSUE DRYING DATA REPORT FOR PROCESS DEFINITION	28JUN96
DOE-RL	S04-96-110	ESTABLISH ACCEPTABILITY OF 105-KE FLOOR SLUDGE BY TWRS	28JUN96
DOE-RL	S07-96-037	PHASE II SAR FOR AUTHORIZATION OF CSB OPER DECK, TUBES, REC CRANE, & MCO HANDLING MACHINE	28JUN96
DOE-RL	S07-96-011	COMPLETE DEFINITIVE DESIGN - CANISTER STORAGE BUILDING (PBF 96-204)	26JUL96
DOE-RL	S08-96-009	CMPLT CONCEPT DESIGN FOR HOT CONDITIONING SYSTEM PROCESS EQUIPMENT (PBF 96-216)	01AUG96

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TABLE 3.4-2
MILESTONE LIST
THROUGH FY 1996

Milestone Type	Reference Number	Milestone Description	Milestone Completion Date
DOE-RL	S08-96-011	CRITICAL DECISION (CD-1/2) TO PROCEED WITH DEFIN DSGN OF THE CBS-HCS PROCESS EQUIP'T	02AUG96
DOE-RL	S07-96-038	PHASE III SAR FOR AUTH OF CSB SUPERSTRUCTURE ERECT AND FAB OF SAFETY CLASS I OR II AUX EQUIP	15AUG96
DOE-RL	S08-96-030	PHASE I SAR FOR AUTHORIZATION OF CIVIL/STRUCTURAL PORTION OF HOT CONDITIONING ANNEX CONST	15AUG96
DOE-RL	S08-96-007	START DEFINITIVE DESIGN - HOT CONDITIONING SYSTEM	23AUG96
DOE-RL	S08-96-006	SUBMIT REV 0 PERFORMANCE SPECIFICATIONS FOR HOT CONDITIONING SYSTEM	26AUG96
DOE-RL	S02-96-210	INTEGRATED REPORT FOR MCO PRESSURIZATION ANALYSIS (OAF)	30AUG96
DOE-RL	S04-96-112	DETERMINE TECHNICAL ACCEPTABILITY OF KE FLOOR SLUDGE FOR TRANSFER TO TANK FARMS (OAF)	30AUG96
DOE-RL	S08-96-013	COMPLETE CVD CILIL/STRUCT SAR DOCUMENTATION (OAF)	31AUG96
DOE-RL	S01-96-211	ISSUE THE FINAL PROGRAM PLAN (FY 97)	03SEP96
DOE-RL	S00-96-908	DOCUMENT THE SNF PROJECT TECHNICAL BASIS (OAF)	15SEP96
DOE-RL	S06-96-010	COMPLETE CASK/TRANSPORTATION PERFORMANCE TESTING	19SEP96
DOE-RL	S06-96-013	CRITICAL DECISION (CD-1/2) TO PROCEED WITH CASK DEFINITIVE DESIGN	26SEP96
DOE-RL	S05-96-011	CRITICAL DECISION (CD-1/2) TO PROCEED WITH MCO DEFINITIVE DESIGN	30SEP96

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Westinghouse Hanford Company MILESTONE DESCRIPTION SHEET			
Title: Initiate FRS Procurement CD-3		Date: 01/26/96	
Assigned To: Spent Nuclear Fuel Project		CIN: SNF-96-095	
Program WBS Designator: 1.4.1.04.03.02.01.01		Due Date: 10/08/96	
Control Number: S04-97-350		Rev: 1	
MILESTONE TYPE: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> CONTRACTOR	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Memorandum	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Initiation of Procurement for the equipment, hardware and components necessary to complete fabrication and installation of process systems in KW by August 29, 1997.			
Description of what constitutes completion of this milestone: This milestone is complete when WHC delivers the documentation necessary for a Critical Decision presentation to the acquisition executive in accordance with the draft guidance for performing CD's. Critical Decision is required by October 8, 1996 to maintain schedule objectives of the Fuel Retrieval Sub-Project.			
Milestone Description Approval			
Cost Account Manager <i>B. S. Carlisle</i> B. S. Carlisle	Date 9-18-96	Program/Project Manager <i>J. C. Fulton</i> J. C. Fulton	Date 9/19/96
Program Element Manager <i>M. J. Wiemers</i> M. J. Wiemers	Date 9/19/96	DOE Monitor <i>K. M. Schierman</i> K. M. Schierman	Date 9/19/96
Milestone Completion Acceptance			
Program Element Manager <i>J. C. Fulton</i> J. C. Fulton	Date 10/8/96	DOE Monitor <i>E. D. Sellers</i> E. D. Sellers	Date 10/28/96

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MILESTONE DESCRIPTION SHEET			
Title: CD3 CSB Deck Pour			Date: 3/2/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 12/20/96
Control Number: S07-97-046			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CSB Deck Pour.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3 Approval allows the CSB to proceed with the deck pour. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

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Westinghouse Hanford Company MILESTONE DESCRIPTION SHEET			
Title: Critical Decision (CD-3) to proceed with Cask/Transportation System Fabrication.			Date: 1/31/96
Assigned To: Spent Nuclear Fuel Project			CIN: SNF-96-013
Program WBS Designator: 1.4.1.06.01.02.01.02			Due Date: 1/22/97
Control Number: S06-97-011			Rev: 0
MILESTONE TYPE: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> CONTRACTOR	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number <hr style="width: 50%; margin-left: 0;"/>	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) CD-3 Presentation Materials	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Prepare Critical Decision presentation materials in accordance with DOE guidelines, conduct the CD-3 presentation (if necessary).			
Description of what constitutes completion of this milestone: This milestone is complete when WHC delivers the documentation necessary for a Critical Decision presentation to the acquisition executive in accordance with the draft guidance for performing CD's. Critical Decision is required by January 23, 1996 in order to maintain schedule objectives of the Cask/Transportation System. Long lead procurement activities will be initiated in advance of fabrication. However the long lead procurement will only be initiated with DOE-RL approval.			
Milestone Description Approval			
Cost Account Manager W.D. Gallo <i>[Signature]</i>	Date 3/13/96	Program/Project Manager J.C. Fulton <i>[Signature]</i>	Date 3/14/96
Program Element Manager W. D. Gallo <i>[Signature]</i>	Date 3/13/96	DOE Monitor K.M. Schierman <i>[Signature]</i>	Date 3/13/96
Milestone Completion Acceptance			
Program Element Manager J.C. Fulton <i>[Signature]</i>	Date Dec 17, 1996	DOE Monitor E.D. Sellers <i>[Signature]</i>	Date 12/17/96

for NH Williams

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MILESTONE DESCRIPTION SHEET			
Title: CD3 MCO Fabrication Approval			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.05.01.04.01			Due Date: 4/30/97
Control Number: S05-97-011			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) <i>Document</i>	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of MCO Fabrication.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3 Approval allows the MCO to proceed with fabrication. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date		

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WBS 1.4.1**

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MILESTONE DESCRIPTION SHEET			
Title: CD3A CVD Construction Approval			Date: 3/2/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.08.03.03.02			Due Date: 1/31/97
Control Number: S08-97-007			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CVD Construction Approval.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3A Approval allows the CVD to proceed with the Construction Approval. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____

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Westinghouse Hanford Company MILESTONE DESCRIPTION SHEET			
Title: Critical Decision (CD-3A) to proceed with Phase I Construction of the CSB-Hot Conditioning System.			Date: 03/21/96
Assigned To: Spent Nuclear Fuel Project			CIN: SNF-96-078
Program WBS Designator: 1.4.1.08.01.03			Due Date: 10/04/96
Control Number: S08-97-012			Rev: 1
MILESTONE TYPE: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> CONTRACTOR	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) CD-3A Presentation Materials	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Prepare Critical Decision presentation materials in accordance with DOE guidelines and conduct the CD-3A presentation (if necessary).			
Description of what constitutes completion of this milestone: This milestone is complete when WHC delivers the documentation necessary for a Critical Decision presentation to the acquisition executive in accordance with the DOE-RL SFD guidance for performing CD's. Critical Decision is required by October 4, 1996 in order to maintain schedule objectives of the CSB-Hot Conditioning system Sub-project.			
Milestone Description Approval			
Cost Account Manager	Date	Program/Project Manager	Date
F.W. Bradshaw	<i>[Signature]</i> 7/24/96	<i>[Signature]</i> J.D. Fulton	7-25-96
Program Element Manager	Date	DOE Monitor	Date
W.D. Gallo	<i>[Signature]</i> 7/24/96	<i>[Signature]</i> E.D. Sellers	
Milestone Completion Acceptance			
CD Milestone Manager (WHC)	Date	CD Milestone Manager (DOE)	Date
J.C. Fulton	<i>[Signature]</i> for 2/13/97	<i>[Signature]</i> E.D. Sellers	2/13/97

N. G. Williams

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MILESTONE DESCRIPTION SHEET			
Title: CD3A CSB Superstructure			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 3/10/97
Control Number: S07-97-044			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CSB Superstructure.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3A Approval allows the CSB to proceed with the Superstructure. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

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MILESTONE DESCRIPTION SHEET			
Title: CD3B CSB Systems Installation			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 4/21/97
Control Number: S07-97-047			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CSB Systems Installation.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3B Approval allows the CSB to proceed with systems installation. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

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MILESTONE DESCRIPTION SHEET			
Title: CD3B HCS Process Equipment Procurement Approval			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 4/30/97
Control Number: S08-97-008			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of HCS Process Procurement.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3B Approval allows the HCS to proceed with procurement. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____

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MILESTONE DESCRIPTION SHEET			
Title: CD3 KW IWTS Procurement/Construction			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.04.06.01			Due Date: 5/28/97
Control Number: S04-97-609			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of KW IWTS Procurement/Construction.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3 Approval allows the KW IWTS to proceed with procurement/construction. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3C CSB MHM Installation			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 5/30/97
Control Number: S07-97-048			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CSB MHM Installation.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3C Approval allows the CSB to proceed with MHM installation. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____	DESH Initials: Responsible Manager _____	DESH Initials: Responsible Manager _____	DESH Initials: Responsible Manager _____
_____ Project Director, FG Hudson Date	_____ Project Director, FG Hudson Date	_____ Project Director, FG Hudson Date	_____ Project Director, FG Hudson Date
FDH Initials: Responsible Manager _____	FDH Initials: Responsible Manager _____	FDH Initials: Responsible Manager _____	FDH Initials: Responsible Manager _____
_____ Project Director, NH Williams Date	_____ Project Director, NH Williams Date	_____ Project Director, NH Williams Date	_____ Project Director, NH Williams Date
DOE-RL Initials: Responsible Monitor _____	DOE-RL Initials: Responsible Monitor _____	DOE-RL Initials: Responsible Monitor _____	DOE-RL Initials: Responsible Monitor _____
_____ Director, ED Sellers Date	_____ Director, ED Sellers Date	_____ Director, ED Sellers Date	_____ Director, ED Sellers Date

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3B CVD Equipment Installation Approval			Date: 3/2/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 6/27/97
Control Number: S08-97-020			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of CVD Equipment Installation Approval.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3B Approval allows the CVD to proceed with the equipment installation approval. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3 KE IWTS Procurement/Construction			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.04.06.01			Due Date: 7/15/97
Control Number: S04-97-616			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of KE IWTS Procurement/Construction.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3 Approval allows the KE IWTS to proceed with procurement/Construction. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3B FRS Installation			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 8/25/97
Control Number: S04-97-352			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of FRS Installation.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3B Approval allows the FRS to proceed with Installation. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3C HCS Process Equipment Installation			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.08.01.03.02			Due Date: 11/14/97
Control Number: S08-98-025			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of HCS Process Equipment Installation.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3C Approval allows the HCS to proceed with equipment installation. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD2 DRS Definitive Design			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 3/31/98
Control Number: S04-98-510			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of DRS Definitive Design.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD2 Approval allows the DRS to proceed with Definitive Design. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD4 Fuel Movement Operations (KW) CSB, CVD, FRS KW, CT, MCO & Crane Mod			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.03.01.06.01.02			Due Date: 5/30/98
Control Number: S03-98-620			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of Fuel Movement Operations.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD4 Approval allows the Fuel Movement to proceed with operations. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD3 DRS Procurement/Construction			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 8/31/98
Control Number: S04-98-511			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of DRS Procurement/Construction.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD3 Approval allows the DRS to proceed with procurement/construction. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____	_____	DESH Initials: Responsible Manager _____	_____
Project Director, FG Hudson Date _____	_____	Project Director, FG Hudson Date _____	_____
FDH Initials: Responsible Manager _____	_____	FDH Initials: Responsible Manager _____	_____
Project Director, NH Williams Date _____	_____	Project Director, NH Williams Date _____	_____
DOE-RL Initials: Responsible Monitor _____	_____	DOE-RL Initials: Responsible Monitor _____	_____
Director, ED Sellers Date _____	_____	Director, ED Sellers Date _____	_____

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD4 PWS Operations			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator:			Due Date: 9/30/98
Control Number: S04-97-101			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of PWS Operations.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD4 Approval allows the PWS to proceed with operations. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD4A Fuel Movement Operations (KE)			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.04.03.08.02.01			Due Date: 1/28/99
Control Number: S04-99-510			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of Fuel Movement Operations (KE).			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD4A Approval allows the Fuel Movement to proceed with operations. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD4 KE IWTS Operations			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.04.06.02			Due Date: 1/29/99
Control Number: S04-98-608			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of KE IWTS Operations.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD4 Approval allows the KE IWTS to proceed with operations. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date _____		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date _____		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date _____		

**SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1**

HNF-SP-1104, Rev 4

MILESTONE DESCRIPTION SHEET			
Title: CD4 HCS Operations			Date: 3/25/97
Assigned To: Spent Nuclear Fuel			CIN:
Program WBS Designator: 1.4.1.08.01.03.02			Due Date: 3/23/99
Control Number: S08-98-013			Rev:
MILESTONE TYPE: <input type="checkbox"/> TPA <input type="checkbox"/> DNFSB <input type="checkbox"/> DOE-HQ <input type="checkbox"/> DOE-RL <input checked="" type="checkbox"/> Project	DIVISION: <input type="checkbox"/> State <input type="checkbox"/> Federal <input checked="" type="checkbox"/> DOE <input type="checkbox"/> RCRA <input type="checkbox"/> TPA Number _____	DELIVERABLE: <input type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other (specify) Document	ADDRESS TO: <input type="checkbox"/> DOE-HQ <input checked="" type="checkbox"/> DOE-RL <input type="checkbox"/> Other (specify)
Milestone Description: Approval of HCS Operations.			
Description of what constitutes completion of this milestone: This Milestone is complete when the DOE-RL acquisition executive approves this critical decision. This CD4 Approval allows the HCS to proceed with operations. Milestone completion acceptance constitutes approval.			
Milestone Description Approval		Milestone Completion Acceptance	
DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date	DESH Initials: Responsible Manager _____ _____ Project Director, FG Hudson Date		
FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date	FDH Initials: Responsible Manager _____ _____ Project Director, NH Williams Date		
DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date	DOE-RL Initials: Responsible Monitor _____ _____ Director, ED Sellers Date		

SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1

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4.1.1 Budget Authority (BA) Summary by WBS
 RL WBS 1.4.1

PBS #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Project Direction		1900	6854	13000	12000	6500	0	0	0	0	0	40254
Sub-Total Project Direction				1900	6854	13000	12000	6500	0	0	0	0	0	40254
RL-WM01	6690-0	QA/ES&H	471	785	258	263	270	50						2097
RL-WM01	6690-0	Regulatory Compliance	1836	1356	1332									4524
RL-WM01	6690-0	Characterization	19000	6915	4638									30553
Sub-Total Safety & Quality				21307	9056	6228	263	270	50	0	0	0	0	37174
RL-WM01	6696-0	Project Integration	26665	13058	13871	13100	9618	6892	0	0	0	0	0	83204
Sub-Total Project Integration				26665	13058	13871	13100	9618	6892	0	0	0	0	83204
RL-WM01	6696-0	Operate K Basins	29849	12045	12353	12689	13026	6800						86762
RL-WM01	6696-0	Maintain K Basins	32576	5016	5151	5291	5432	2839						56305
RL-WM01	6696-0	Provide/Maintain K Basin Baseline Doc	4482	2246	2307	2370	2433	1278						15116
RL-WM01	6696-0	K Basin Staff Training	784	2532	2600	2671	2742	0						11329
RL-WM01	6696-0	K Basin Management	6003	3498	3593	3691	3789	1987						22561
RL-WM01	6696-0	Fuel Relocation Common Operations		6638	18294	12257	13473	0						50662
Sub-Total K Basin Operations & Maintenance				73694	31975	44298	38969	40895	12904	0	0	0	0	242735
RL-WM01	6696-0	FRS K Basin Startup/Training	463	926	3705	474								5568
RL-WM01	6696-0	FRS K Basin Operations			2355	6356	3428							12139
RL-WM01	6696-0	Testing & MSA of Transportation		0	69									69
Sub-Total FRS Operations				463	926	6129	6830	3428	0	0	0	0	0	17776
RL-WM01	6696-0	Debris Removal Operations	760	1145	270	1896	2427	4						6502
Sub-Total Debris Removal Operations				760	1145	270	1896	2427	4	0	0	0	0	6502
RL-WM01	6696-1	Cold Vacuum Drying Fac Startup & MSA	228	763	2283									3274
RL-WM01	6696-1	CVD Operations			1747	5471	4695							11913
Sub-Total CVD Operations				228	763	4030	5471	4695	0	0	0	0	0	15187

SPENT NUCLEAR FUEL PROJECT
 WBS 1.4.1

4.1.1 Budget Authority (BA) Summary by WBS

RL WBS 1.4.1

PBS #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Water Treatment Operations	1299	373	1646	1239	6351							10908
Sub-Total Water Treatment Operations			1299	373	1646	1239	6351	0	0	0	0	0	0	10908
RL-WM01	6696-0	Sludge Removal Operations			0	960	2861	471						4292
Sub-Total Sludge Removal Operations			0	0	0	960	2861	471	0	0	0	0	0	4292
RL-WM01	6696-1	Hot Cond Sys Startup & ORR			2192	403								2595
RL-WM01	6696-1	HCS Operations				707	1333	628						2668
Sub-Total Hot Conditioning System Operations			0	0	2192	1110	1333	628	0	0	0	0	0	5263
RL-WM01	6696-1	CSB Startup & MSA	600	912	2651									4183
RL-WM01	6696-1	Operations of CSB	100		2275	7324	6830	1165						17694
Sub-Total CSB Operations			700	912	4926	7324	6830	1165	0	0	0	0	0	21857
RL-WM01	6696-0	Sub-Total Operations	76216	34419	52343	49894	55962	13379	0	0	0	0	0	282213
RL-WM01	6696-1	Sub-Total Operations	928	1675	11148	13905	12858	1793	0	0	0	0	0	42307
Total Operations			77144	36094	63491	63799	68820	15172	0	0	0	0	0	324520
RL-WM01	6696-0	Essential Systems	7439	2453	1413									11305
RL-WM01	6696-0	Cold Test Facility	691	615	497	426	353							2582
RL-WM01	6696-0	Roof Repairs	1100											1100
RL-WM01	6696-0	Trailer Moves	123											123
RL-WM01	6696-0	Basin Personnel Facility Upgrades	318	1498										1816
RL-WM01	6696-0	Basin Facility Support Upgrades	258	34										292
RL-WM01	6696-0	Dose Reduction System	5577	2041	661									8279
RL-WM01	6696-0	Basin Fac Upgrades for Transport	782	4541	2250									7573
RL-WM01	6696-0	Deactivation Preparation		51	250	500	500	250						1551
Sub-Total Facility Upgrades			16288	11233	5071	926	853	250	0	0	0	0	0	34621

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4.1.1 Budget Authority (BA) Summary by WBS
 RL WBS 1.4.1

PBS #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	FRS Technical Baseline	1793	308	20									2121
RL-WM01	6696-0	FRS Project Management	413	407	992	442								2254
RL-WM01	6696-0	FRS Design	3589	2431	527									6547
RL-WM01	6696-0	FRS Proc/Fab/Construction	226	6013	3830									10069
RL-WM01	6696-0	FRS Equipment Test	705	786										1491
RL-WM01	6696-0	FRS Regulatory Compliance	141	649	36									826
Sub-Total Fuel Removal			6867	10594	5405	442	0	0	0	0	0	0	0	23308
RL-WM01	6696-0	Sludge Removal System	3214	2229	5561	6117	693							17814
Sub-Total Sludge Removal			3214	2229	5561	6117	693	0	0	0	0	0	0	17814
RL-WM01	6696-0	Debris Removal Project	3591	1117	4060	2872	293							11933
Sub-Total Debris Removal			3591	1117	4060	2872	293	0	0	0	0	0	0	11933
RL-WM01	6696-0	Water Treatment System	5862	8037	8624	1015	967							24505
Sub-Total Integrated Water System			5862	8037	8624	1015	967	0	0	0	0	0	0	24505
Total Facility Projects			35822	33210	28721	11372	2806	250	0	0	0	0	0	112181
RL-WM01	6696-0	MCO Acquisition Definition	1742	19										1761
RL-WM01	6696-0	MCO Project Management	655	810	748	274	226							2713
RL-WM01	6696-0	MCO Design	1004	948										1952
RL-WM01	6696-0	MCO Fabrication		1746	10771	17926	6694							37137
RL-WM01	6696-0	Testing & Qualification of MCOs	925	147										1072
RL-WM01	6696-0	MCO Topical Safety Report	190	256	132									578
Sub-Total Multi Canister Overpack (MCO)			4516	3926	11651	18200	6920	0	0	0	0	0	0	45213

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4.1.1 Budget Authority (BA) Summary by WBS RL WBS 1.4.1

PBS #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Cask/Trans Acquisition Definition	1818											1818
RL-WM01	6696-0	Cask/Trans Project Management	612	531	368									1511
RL-WM01	6696-0	Cask/Trans Design	1716	1283										2999
RL-WM01	6696-0	Cask/Trans Fabrication	783	4724	3010									8517
RL-WM01	6696-0	Testing & Qualification of Cask	381											381
RL-WM01	6696-0	Cask/Trans Regulatory Compliance	591	396	64									1051
		Sub-Total Cask/Transportation	5901	6934	3442	0	0	0	0	0	0	0	0	16277
RL-WM01	6696-0	T-Plant	124	43	43	1405	1045	1427						4087
RL-WM01	6696-0	Burial Grounds			11									11
RL-WM01	6696-0	PNL Labs, Bldgs 324, 325, 327	630	61	103	249	320	33						1396
RL-WM01	6696-0	306 Annex	149	127	82	84	253	6						701
RL-WM01	6696-0	FFTF	125	93	162	1460	3907	2475						8222
RL-WM01	6696-0	PFP	14	27	38	28	103	29						239
RL-WM01	6696-0	PUREX Fuel Transfer	1091											1091
RL-WM01	6696-0	N Reactor Fuel Transfer	24											24
RL-WM01	6696-0	National Programs	206	120	67	69	71							533
		Sub-Total Other Hanford Fuel	2953	471	506	3295	5669	3970	0	0	0	0	0	16304
		Total SNF Storage	12760	11331	15599	21495	12619	3970	0	0	0	0	0	77794
RL-WM01	6696-1	CSB Project Management	7865	6966	561									15412
RL-WM01	6696-1	CSB Design	12321	4075	338									16734
RL-WM01	6696-1	CSB Construction	24507	30691	6472									64670
RL-WM01	6696-1	CSB Regulatory Compliance	1134	628	45									1807
RL-WM01	6696-1	MFM Fabrication	2885	5056	178									8119
		Sub-Total Canister Storage Building	46712	50416	7614	0	0	0	0	0	0	0	0	106742
RL-WM01	6696-1	CVD Technical Baseline Development	2053											2053
RL-WM01	6696-1	CVD Project Management	259	970	116									1345
RL-WM01	6696-1	CVD Design	1609	650	1300									2259
RL-WM01	6696-1	CVD Construction	150	8505										8955
RL-WM01	6696-1	CVD Regulatory Compliance	203	327										530
		Sub-Total Cold Vacuum Drying	4274	10452	1416	0	0	0	0	0	0	0	0	16142

**4.1.1 Budget Authority (BA) Summary by WBS
RL WBS 1.4.1**

PBS #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-1	HCS Acquisition Definition	966	201										1167
RL-WM01	6696-1	HCS Project Management	167	1720	1288									3175
RL-WM01	6696-1	HCS Design	1462	2833										4295
RL-WM01	6696-1	HCS Construction	25	123	6502									6650
RL-WM01	6696-1	HCS Regulatory Compliance	300	493	226									1019
Sub-Total Hot Conditioning System			2920	5370	8016	0	0	0	0	0	0	0	0	16306
Total Conditioning Projects			7194	15822	9432	0	0	0	0	0	0	0	0	32448
RL-WM01	6696-0	Total SNF Projects	172790	102974	123616	109124	93275	31041	0	0	0	0	0	632820
RL-WM01	6696-1	Total SNF Projects	56834	67913	28194	13905	12858	1793	0	0	0	0	0	181497
RL-WM01	GRAND TOTAL SNF PROJECTS		229624	170887	151810	123029	106133	32834	0	0	0	0	0	814317
		HQ/RL Assessments		4113										4113
		Total	229624	175000	151810	123029	106133	32834	0	0	0	0	0	818430

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years											TOTAL	
				FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006			
RL-WM01	6696-0	Project Direction	Expense	1900	6854	13000	12000	6500								40254
			CENRTC													0
			Line Item													0
			GPP													0
			Total BCWS/PMB (1) & (2)	0	1900	6854	13000	12000	6500	0	0	0	0	0	0	40254
			Expense Carryover													0
			Capital Equipment Carryover													0
			Line Item Carryover													0
			Total	0	1900	6854	13000	12000	6500	0	0	0	0	0	0	40254
RL-WM01	6696-0	OAVES&H	Expense	471	785	258	283	270	50							2097
			CENRTC													0
			Line Item													0
			GPP													0
			Total BCWS/PMB (1) & (2)	471	785	258	283	270	50	0	0	0	0	0	0	2097
			Expense Carryover													0
			Capital Equipment Carryover													0
			Line Item Carryover													0
			Total	471	785	258	283	270	50	0	0	0	0	0	0	2097
RL-WM01	6696-0	Regulatory Compliance	Expense	1836	1356	1332										4524
			CENRTC													0
			Line Item													0
			GPP													0
			Total BCWS/PMB (1) & (2)	1836	1356	1332	0	0	0	0	0	0	0	0	0	4524
			Expense Carryover													0
			Capital Equipment Carryover													0
			Line Item Carryover													0
			Total	1836	1356	1332	0	0	0	0	0	0	0	0	0	4524
RL-WM01	6696-0	Characterization	Expense	1895	6915	4638										30418
			CENRTC	135												135
			Line Item													0
			GPP													0
			Total BCWS/PMB (1) & (2)	1900	6915	4638	0	0	0	0	0	0	0	0	0	30663
			Expense Carryover	-881	881											0
			Capital Equipment Carryover	-75	75											0
			Line Item Carryover													0
			Total	18044	7871	4638	0	0	0	0	0	0	0	0	0	30663
			Expense	21172	9056	6228	263	270	50	0	0	0	0	0	0	37039
			CENRTC	135	0	0	0	0	0	0	0	0	0	0	0	135
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	21307	9056	6228	263	270	50	0	0	0	0	0	0	37174
			Expense Carryover	-881	881											0
			Capital Equipment Carryover	-75	75											0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	20351	10012	6228	263	270	50	0	0	0	0	0	0	37174

Sub-Total Safety & Quality

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2006	TOTAL
RL-WM01	6696-0	Project Integration	Expense	26655	13058	1371	13100	9618	6892	0	0	0	0	83204
			CENRTC	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	26655	13058	1371	13100	9618	6892	0	0	0	0	83204
			Expense Carryover	-11										0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	26654	13069	1371	13100	9618	6892	0	0	0	0	83204
RL-WM01	6696-0	Operate K Basins	Expense	28428	12045	12353	12689	13026	6800	0	0	0	0	85341
			CENRTC	1421										1421
			Line Item											0
			GPP											0
			Total BCWS/PMB (1) & (2)	28449	12045	12353	12689	13026	6800	0	0	0	0	86782
			Expense Carryover											0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	28449	12045	12353	12689	13026	6800	0	0	0	0	86782
RL-WM01	6696-0	Maintain K Basins	Expense	32576	5016	5151	5291	5432	2839	0	0	0	0	56305
			CENRTC											0
			Line Item											0
			GPP											0
			Total BCWS/PMB (1) & (2)	32576	5016	5151	5291	5432	2839	0	0	0	0	56305
			Expense Carryover											0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	32576	5016	5151	5291	5432	2839	0	0	0	0	56305
RL-WM01	6696-0	Provide/Maintain K Basin Baseline Documentation	Expense	4482	2246	2307	2370	2433	1278	0	0	0	0	15116
			CENRTC											15116
			Line Item											0
			GPP											0
			Total BCWS/PMB (1) & (2)	4482	2246	2307	2370	2433	1278	0	0	0	0	15116
			Expense Carryover											0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	4482	2246	2307	2370	2433	1278	0	0	0	0	15116
RL-WM01	6696-0	K Basin Staff Training	Expense	784	2532	2600	2671	2742	0	0	0	0	0	11329
			CENRTC											11329
			Line Item											0
			GPP											0
			Total BCWS/PMB (1) & (2)	784	2532	2600	2671	2742	0	0	0	0	0	11329
			Expense Carryover											0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	784	2532	2600	2671	2742	0	0	0	0	0	11329

4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL			
RL-WM01	6696-0	K Basin Management	Expense		6003	3498	3593	3691	3789	1987					22561			
			CENRTC													0		
			Line Item														0	
			GPP														0	
			Total BCWS/PMB (1) & (2)		6003	3498	3593	3691	3789	1987	0	0	0	0	0	0	22561	
			Expense Carryover														0	
			Capital Equipment Carryover														0	
			Line Item Carryover														0	
			Total		6003	3498	3593	3691	3789	1987	0	0	0	0	0	0	0	22561
RL-WM01	6696-0	Fuel Relocation Common Operations	Expense		6638	18294	12257	13473	0						50662			
			CENRTC													0		
			Line Item													0		
			GPP													0		
			Total BCWS/PMB (1) & (2)		0	6638	18294	12257	13473	0	0	0	0	0	0	0	50662	
			Expense Carryover														0	
			Capital Equipment Carryover														0	
			Line Item Carryover														0	
			Total		0	6638	18294	12257	13473	0	0	0	0	0	0	0	50662	
4.1-8 Sub-Total K Basin Operations & Maintenance			Expense	72273	31975	44298	38969	40895	12904	0	0	0	0	0	241314			
			CENRTC	1421	0	0	0	0	0	0	0	0	0	0	0	1421		
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0		
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Total BCWS/PMB (1) & (2)	73694	31975	44298	38969	40895	12904	0	0	0	0	0	0	0	242735	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	73694	31975	44298	38969	40895	12904	0	0	0	0	0	0	0	242735	
RL-WM01	6696-0	FRS K Basin Startup/ Training	Expense	463	926	3705	474								5568			
			CENRTC													0		
			Line Item													0		
			GPP													0		
			Total BCWS/PMB (1) & (2)	463	926	3705	474	0	0	0	0	0	0	0	0	0	5568	
			Expense Carryover														0	
			Capital Equipment Carryover														0	
			Line Item Carryover														0	
			Total	463	926	3705	474	0	0	0	0	0	0	0	0	0	5568	
RL-WM01	6696-0	FRS K Basin Operations	Expense			2355	6356	3428							12139			
			CENRTC													0		
			Line Item													0		
			GPP													0		
			Total BCWS/PMB (1) & (2)	0	0	2355	6356	3428	0	0	0	0	0	0	0	0	12139	
			Expense Carryover														0	
			Capital Equipment Carryover														0	
			Line Item Carryover														0	
			Total	0	0	2355	6356	3428	0	0	0	0	0	0	0	0	12139	

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Testing & MSA of Transportation	Expense			69									69		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)	0	0	69	0	0	0	0	0	0	0	0	0	0	69
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	0	0	69	0	0	0	0	0	0	0	0	0	0	69
			Sub-Total FRS Operations														
RL-WM01	6696-0	Debris Removal Operations	Expense	463	926	6129	6830	3428	0	0	0	0	0	0	0	17776	
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	463	926	6129	6830	3428	0	0	0	0	0	0	0	0	17776
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	463	926	6129	6830	3428	0	0	0	0	0	0	0	0	17776
			Sub-Total Debris Removal Operations														
RL-WM01	6696-1	Cold Vacuum Drying Fac. Startup & MSA	Expense	228	763	2283										3274	
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	228	763	2283	0	0	0	0	0	0	0	0	0	0	3274
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	228	763	2283	0	0	0	0	0	0	0	0	0	0	3274

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-1	CVD Operations	Expense			1747	5471	4695							11913		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)	0	0	1747	5471	4695	0	0	0	0	0	0	0	0	11913
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	0	0	1747	5471	4695	0	0	0	0	0	0	0	0	11913
			Sub-Total CVD Operations														
			Expense	228	763	4030	5471	4695	0	0	0	0	0	0	15187		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	228	763	4030	5471	4695	0	0	0	0	0	0	0	15187	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	228	763	4030	5471	4695	0	0	0	0	0	0	0	15187	
			Sub-Total Water Treatment Operations														
RL-WM01	6696-0	Water Treatment Operations	Expense	1299	373	1646	1239	6351							10908		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	1299	373	1646	1239	6351	0	0	0	0	0	0	0	10908	
			Expense Carryover													0	
			Capital Equipment Carryover													0	
			Line Item Carryover													0	
			Total	1299	373	1646	1239	6351	0	0	0	0	0	0	0	10908	
			Sub-Total Water Treatment Operations														
			Expense	1299	373	1646	1239	6351	0	0	0	0	0	0	10908		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	1299	373	1646	1239	6351	0	0	0	0	0	0	0	10908	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	1299	373	1646	1239	6351	0	0	0	0	0	0	0	10908	
			Sub-Total Water Treatment Operations														
RL-WM01	6696-0	Sludge Removal Operations	Expense			0	960	2861	471						4292		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	0	0	0	960	2861	471	0	0	0	0	0	0	4292	
			Expense Carryover													0	
			Capital Equipment Carryover													0	
			Line Item Carryover													0	
			Total	0	0	0	960	2861	471	0	0	0	0	0	0	4292	

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SPENT NUCLEAR FUEL PROJECT
 WBS 1.4.1

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Sub-Total Sludge Removal Operations															
			Expense	0	0	0	960	2861	471	0	0	0	0	0	4292
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	0	0	0	960	2861	471	0	0	0	0	0	4292
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	0	0	0	960	2861	471	0	0	0	0	0	4292
RL-WM01	6696-1	Hot Cond Sys Startup and ORR	Expense			2192	403								2595
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	0	0	2192	403	0	0	0	0	0	0	0	2595
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	0	2192	403	0	0	0	0	0	0	0	2595
RL-WM01	6696-1	HCS Operations	Expense				707	1333	628						2668
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	0	0	0	707	1333	628	0	0	0	0	0	2668
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	0	0	707	1333	628	0	0	0	0	0	2668
Sub-Total HCS Operations															
			Expense	0	0	2192	1110	1333	628	0	0	0	0	0	5263
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	0	0	2192	1110	1333	628	0	0	0	0	0	5263
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	0	0	2192	1110	1333	628	0	0	0	0	0	5263
RL-WM01	6696-1	CSB Startup and MSA	Expense	600	912	2651									4163
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	600	912	2651	0	0	0	0	0	0	0	0	4163
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	600	912	2651	0	0	0	0	0	0	0	0	4163

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SPENT NUCLEAR FUEL PROJECT
 WBS 1.4.1

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL				
RL-WM01	6696-1	Operations of CSB	Expense		100	2275	7324	6830	1165						17694				
			CENRTC													0			
			Line Item													0			
			GPP													0			
			Total BCWS/PMB (1) & (2)		100	0	2275	7324	6830	1165	0	0	0	0	0	0	17694		
			Expense Carryover														0		
			Capital Equipment Carryover														0		
			Line Item Carryover														0		
			Total		100	0	2275	7324	6830	1165	0	0	0	0	0	0	17694		
			Sub-Total CSB Operations																
						Expense	700	912	4926	7324	6830	1165	0	0	0	0	0	0	21857
CENRTC						0	0	0	0	0	0	0	0	0	0	0	0		
Line Item						0	0	0	0	0	0	0	0	0	0	0	0		
GPP						0	0	0	0	0	0	0	0	0	0	0	0		
Total BCWS/PMB (1) & (2)	700	912				4926	7324	6830	1165	0	0	0	0	0	0	0	21857		
Expense Carryover						0	0	0	0	0	0	0	0	0	0	0	0		
Capital Equipment Carryover						0	0	0	0	0	0	0	0	0	0	0	0		
Line Item Carryover						0	0	0	0	0	0	0	0	0	0	0	0		
Total	700	912				4926	7324	6830	1165	0	0	0	0	0	0	0	21857		
RL-WM01	6696-0	Sub-Total Operations				Expense	74795	34419	52343	49894	55962	13379	0	0	0	0	0	0	280792
						CENRTC	1421	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Total BCWS/PMB (1) & (2)	76216	34419	52343	49894	56962	13379	0	0	0	0	0	0	0	282213		
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Total	76216	34419	52343	49894	56962	13379	0	0	0	0	0	0	0	282213		
			RL-WM01	6696-1	Sub-Total Operations	Expense	928	1675	11148	13905	12858	1793	0	0	0	0	0	0	42307
						CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item	0	0				0	0	0	0	0	0	0	0	0	0	0	0		
GPP	0	0				0	0	0	0	0	0	0	0	0	0	0	0		
Total BCWS/PMB (1) & (2)	928	1675				11148	13905	12858	1793	0	0	0	0	0	0	0	42307		
Expense Carryover	0	0				0	0	0	0	0	0	0	0	0	0	0	0		
Capital Equipment Carryover	0	0				0	0	0	0	0	0	0	0	0	0	0	0		
Line Item Carryover	0	0				0	0	0	0	0	0	0	0	0	0	0	0		
Total	928	1675				11148	13905	12858	1793	0	0	0	0	0	0	0	42307		
Total Operations						Expense	75723	36094	63491	63799	68820	15172	0	0	0	0	0	0	323099
						CENRTC	1421	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Total BCWS/PMB (1) & (2)	77144	36094	63491	63799	68820	16172	0	0	0	0	0	0	0	324620		
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Total	77144	36094	63491	63799	68820	16172	0	0	0	0	0	0	0	324620		

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Essential Systems	Expense		7439	2453	1413								11305		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)		7439	2453	1413	0	0	0	0	0	0	0	0	0	11305
			Expense Carryover		-500	500											0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total		6939	2953	1413	0	0	0	0	0	0	0	0	0	11305
			RL-WM01	6696-0	Cold Test Facility	Expense		691	615	497	426	353					
CENRTC																0	
Line Item																0	
GPP																0	
Total BCWS/PMB (1) & (2)		691				615	497	426	363	0	0	0	0	0	0	0	2582
Expense Carryover																	0
Capital Equipment Carryover																	0
Line Item Carryover																	0
Total		691				615	497	426	363	0	0	0	0	0	0	0	2582
RL-WM01	6696-0	Roof Repairs				Expense		1100									
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		1100	0	0	0	0	0	0	0	0	0	0	0	1100
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total		1100	0	0	0	0	0	0	0	0	0	0	0	1100
			RL-WM01	6696-0	Trailer Moves	Expense		123									
CENRTC																0	
Line Item																0	
GPP																0	
Total BCWS/PMB (1) & (2)		123				0	0	0	0	0	0	0	0	0	0	0	123
Expense Carryover																	0
Capital Equipment Carryover																	0
Line Item Carryover																	0
Total		123				0	0	0	0	0	0	0	0	0	0	0	123
RL-WM01	6696-0	Basin Personnel Facility Upgrades				Expense		318	1498								
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		318	1498	0	0	0	0	0	0	0	0	0	0	1816
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total		318	1498	0	0	0	0	0	0	0	0	0	0	1816

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WBS 1.4.1

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6695-0	Basin Facility Support Upgrades	Expense	258	34										292
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	258	34	0	0	0	0	0	0	0	0	0	292
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	258	34	0	0	0	0	0	0	0	0	0	292
RL-WM01	6695-0	Dose Reduction System	Expense	5577	2041	651									8278
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	5577	2041	651	0	0	0	0	0	0	0	0	8278
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	5577	2041	651	0	0	0	0	0	0	0	0	8278
			Expense	782	63										845
			CENRTC												6728
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	782	4541	2250	0	0	0	0	0	0	0	0	7573
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	747	4576	2250	0	0	0	0	0	0	0	0	7573
RL-WM01	6695-0	Deactivation Preparation	Expense		51	250	500	500	250						1551
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	0	51	250	500	500	250	0	0	0	0	0	1551
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	51	250	500	500	250	0	0	0	0	0	1551
			Expense	16288	6755	2821	926	853	250	0	0	0	0	0	27683
			CENRTC												6728
			Line Item												0
			Gpp												0
			Total BCWS/PMB (1) & (2)	16288	11233	5071	926	853	250	0	0	0	0	0	34621
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	16763	11768	5071	926	853	250	0	0	0	0	0	34621

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6596-0	FRS Technical Baseline	Expense	1793	308	20									2121
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1793	308	20	0	0	0	0	0	0	0	0	2121
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1793	308	20	0	0	0	0	0	0	0	0	2121
RL-WM01	6596-0	FRS Project Management	Expense	413	407	992	442								2254
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	413	407	992	442	0	0	0	0	0	0	0	2254
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	413	407	992	442	0	0	0	0	0	0	0	2254
RL-WM01	6596-0	FRS Design	Expense	3589	2431	527									6547
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	3589	2431	527	0	0	0	0	0	0	0	0	6547
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	3589	2431	527	0	0	0	0	0	0	0	0	6547
RL-WM01	6596-0	FRS Proc/Fab/Construction	Expense	226	6013	3830									10069
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	226	6013	3830	0	0	0	0	0	0	0	0	10069
			Expense Carryover	-200	200										0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	26	6213	3830	0	0	0	0	0	0	0	0	10069
RL-WM01	6596-0	FRS Equipment Test	Expense	705	786										1491
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	705	786	0	0	0	0	0	0	0	0	0	1491
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	705	786	0	0	0	0	0	0	0	0	0	1491

4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	FRS Regulatory Compliance	Expense	141	649	36									826		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	141	649	36	0	0	0	0	0	0	0	0	0	0	826
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	141	649	36	0	0	0	0	0	0	0	0	0	0	826
			Sub-Total Fuel Removal														
			Expense	6867	10594	5405	442	0	0	0	0	0	0	0	23308		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	6867	10594	5405	442	0	0	0	0	0	0	0	0	0	23308
			Expense Carryover	-200	200	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	6667	10794	5405	442	0	0	0	0	0	0	0	0	0	23308
			RL-WM01	6696-0	Sludge Removal System	Expense	3214	2229	5561	6117	693						
CENRTC																0	
Line Item																0	
GPP																0	
Total BCWS/PMB (1) & (2)	3214	2229				5561	6117	693	0	0	0	0	0	0	0	0	17814
Expense Carryover																	0
Capital Equipment Carryover																	0
Line Item Carryover																	0
Total	3214	2229				5561	6117	693	0	0	0	0	0	0	0	0	17814
Sub-Total Sludge Removal																	
			Expense	3214	2229	5561	6117	693	0	0	0	0	0	0	17814		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	3214	2229	5561	6117	693	0	0	0	0	0	0	0	0	17814
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	3214	2229	5561	6117	693	0	0	0	0	0	0	0	0	17814
			RL-WM01	6696-0	Debris Removal Project	Expense	3591	1117	4060	2872	293						
CENRTC																0	
Line Item																0	
GPP																0	
Total BCWS/PMB (1) & (2)	3591	1117				4060	2872	293	0	0	0	0	0	0	0	0	11933
Expense Carryover																	0
Capital Equipment Carryover																	0
Line Item Carryover																	0
Total	3591	1117				4060	2872	293	0	0	0	0	0	0	0	0	11933

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Sub-Total Debris Removal															
			Expense	3591	1117	4060	2872	293	0	0	0	0	0	0	11933
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	3591	1117	4060	2872	293	0	0	0	0	0	0	11933
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	3591	1117	4060	2872	293	0	0	0	0	0	0	11933
RL-WM01 6696-0 Water Treatment System															
			Expense	4440	1502	1802	1015	967							9726
			CENRTC	1422	6535	6822									14779
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	5862	8037	8624	1015	967	0	0	0	0	0	0	24505
			Expense Carryover												0
			Capital Equipment Carryover	-430	430										0
			Line Item Carryover												0
			Total	5432	8467	8624	1015	967	0	0	0	0	0	0	24505
Sub-Total Integrated Water Treatment System															
			Expense	4440	1502	1802	1015	967	0	0	0	0	0	0	9726
			CENRTC	1422	6535	6822	0	0	0	0	0	0	0	0	14779
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	5862	8037	8624	1015	967	0	0	0	0	0	0	24505
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-430	430	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	5432	8467	8624	1015	967	0	0	0	0	0	0	24505
Total Facility Projects															
			Expense	34400	22197	19649	11372	2806	250	0	0	0	0	0	90674
			CENRTC	1422	11013	9072	0	0	0	0	0	0	0	0	21507
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	35822	33210	28721	11372	2806	250	0	0	0	0	0	112181
			Expense Carryover	-735	735	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-430	430	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	34657	34375	28721	11372	2806	250	0	0	0	0	0	112181
RL-WM01 6696-0 MCO Acquisition Definition															
			Expense	1695	19										1714
			CENRTC	47											47
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1742	19	0	0	0	0	0	0	0	0	0	1761
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1742	19	0	0	0	0	0	0	0	0	0	1761

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	Prior Years										TOTAL		
			FY1997	FY1998	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006			
RL-WM01	6696-0	MCO Project Management	655	810	748	274	226								2713
		Expense													0
		CENRTC													0
		Line Item													0
		Gpp													0
		Total BCWS/PMB (1) & (2)	655	810	748	274	226								2713
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total	655	810	748	274	226								2713
RL-WM01	6696-0	MCO Design	1004	948											1952
		Expense													0
		CENRTC													0
		Line Item													0
		Gpp													0
		Total BCWS/PMB (1) & (2)	1004	948	0	0	0	0	0	0	0	0	0	0	1952
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total	1004	948	0	0	0	0	0	0	0	0	0	0	1952
RL-WM01	6696-0	MCO Fabrication	1746	10771	17926	6694									37137
		Expense													0
		CENRTC													0
		Line Item													0
		Gpp													0
		Total BCWS/PMB (1) & (2)	0	1746	10771	17926	6694	0	0	0	0	0	0	0	37137
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total	0	1746	10771	17926	6694	0	0	0	0	0	0	0	37137
RL-WM01	6696-0	Testing & Qualification of MCO's	925	147											1072
		Expense													0
		CENRTC													0
		Line Item													0
		Gpp													0
		Total BCWS/PMB (1) & (2)	925	147	0	0	0	0	0	0	0	0	0	0	1072
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total	925	147	0	0	0	0	0	0	0	0	0	0	1072
RL-WM01	6696-0	MCO Topical Safety Report	190	256	132										578
		Expense													0
		CENRTC													0
		Line Item													0
		Gpp													0
		Total BCWS/PMB (1) & (2)	190	256	132	0	0	0	0	0	0	0	0	0	578
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total	190	256	132	0	0	0	0	0	0	0	0	0	578

4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Sub-Total Multi Canister Overpacks (MCOs)															
			Expense	4469	3926	11651	18200	6920	0	0	0	0	0	0	45166
			CENRTC	47	0	0	0	0	0	0	0	0	0	0	47
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	4516	3926	11651	18200	6920	0	0	0	0	0	0	45213
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	4516	3926	11651	18200	6920	0	0	0	0	0	0	45213
RL-WM01	6696-0	Cask/Transportation Acquisition Definition	Expense	1818											1818
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1818	0	0	0	0	0	0	0	0	0	0	1818
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1818	0	0	0	0	0	0	0	0	0	0	1818
RL-WM01	6696-0	Cask/Transportation Project Management	Expense	612	531	368									1511
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	612	531	368	0	0	0	0	0	0	0	0	1511
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	612	531	368	0	0	0	0	0	0	0	0	1511
RL-WM01	6696-0	Cask/Transportation Design	Expense		76										76
			CENRTC	1716	1207										2923
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1716	1283	0	0	0	0	0	0	0	0	0	2999
			Expense Carryover	-65	65										0
			Capital Equipment Carryover	-640	640										0
			Line Item Carryover												0
			Total	1011	1988	0	0	0	0	0	0	0	0	0	2999
RL-WM01	6696-0	Cask/Transportation Fabrication	Expense												0
			CENRTC	783	4724	3010									8517
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	783	4724	3010	0	0	0	0	0	0	0	0	8517
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	783	4724	3010	0	0	0	0	0	0	0	0	8517

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Testing & Qualification of Cask	381											381
		Expense												
		CENRTC												
		Line Item												
		GPP												
		Total BCWS/PMB (1) & (2)	381	0	0	0	0	0	0	0	0	0	0	381
		Expense Carryover												
		Capital Equipment Carryover												
		Line Item Carryover												
		Total	381	0	0	0	0	0	0	0	0	0	0	381
RL-WM01	6696-0	Cask/Transportation Regulatory Compliance		591	396	64								1051
		Expense												
		CENRTC												
		Line Item												
		GPP												
		Total BCWS/PMB (1) & (2)	591	396	64	0	0	0	0	0	0	0	0	1051
		Expense Carryover												
		Capital Equipment Carryover												
		Line Item Carryover												
		Total	591	396	64	0	0	0	0	0	0	0	0	1051
		Sub-Total Cask/Transportation		3402	1003	432	0	0	0	0	0	0	0	4837
		Expense		2499	5631	3010	0	0	0	0	0	0	0	11440
		CENRTC												
		Line Item												
		GPP												
		Total BCWS/PMB (1) & (2)	5901	6634	3442	0	0	0	0	0	0	0	0	16277
		Expense Carryover		-65	65	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover		-640	640	0	0	0	0	0	0	0	0	0
		Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0
		Total	5186	7639	3442	0	0	0	0	0	0	0	0	16277
RL-WM01	6696-0	PUREX Fuel Transfer		1091										1091
		Expense												
		CENRTC												
		Line Item												
		GPP												
		Total BCWS/PMB (1) & (2)	1091	0	0	0	0	0	0	0	0	0	0	1091
		Expense Carryover												
		Capital Equipment Carryover												
		Line Item Carryover												
		Total	1091	0	0	0	0	0	0	0	0	0	0	1091
RL-WM01	6696-0	T-Plant		124	43	1405	1045	1427						4087
		Expense												
		CENRTC												
		Line Item												
		GPP												
		Total BCWS/PMB (1) & (2)	124	43	1405	1045	1427	0	0	0	0	0	0	4087
		Expense Carryover		-56	56	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover												
		Line Item Carryover												
		Total	68	99	43	1405	1045	1427	0	0	0	0	0	4087

4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Burial Grounds	Expense			11									11		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)	0	0	11	0	0	0	0	0	0	0	0	0	0	11
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	0	0	11	0	0	0	0	0	0	0	0	0	0	11
RL-WM01	6696-0	PNL Labs, Bldgs. 324, 325, 327	Expense	630	61	103	249	320	33						1396		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	630	61	103	249	320	33	0	0	0	0	0	0	1396	
			Expense Carryover	-176	176												0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	454	237	103	249	320	33	0	0	0	0	0	0	0	1396
RL-WM01	6696-0	308 Annex	Expense	149	127	82	84	253	6						701		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	149	127	82	84	253	6	0	0	0	0	0	0	701	
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	149	127	82	84	253	6	0	0	0	0	0	0	0	701
RL-WM01	6696-0	FFTF	Expense	125	93	162	1085	3682	2475						7622		
			CENRTC				375	225								600	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	125	93	162	1460	3907	2475	0	0	0	0	0	0	8222	
			Expense Carryover	-40	40												0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	85	133	162	1460	3907	2475	0	0	0	0	0	0	0	8222
RL-WM01	6696-0	PFP	Expense	14	27	38	28	103	29						239		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	14	27	38	28	103	29	0	0	0	0	0	0	239	
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	14	27	38	28	103	29	0	0	0	0	0	0	0	239

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2006	FY2006	TOTAL
RL-WM01	6696-0	N Reactor Fuel Transfer	Expense	24											24
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	24	0	0	0	0	0	0	0	0	0	0	24
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	24	0	0	0	0	0	0	0	0	0	0	24
RL-WM01	6696-0	National Programs	Expense	206	120	67	69	71							533
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	206	120	67	69	71	0	0	0	0	0	0	533
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	206	120	67	69	71	0	0	0	0	0	0	533
Sub-Total Other Hanford Fuel			Expense	2363	471	506	2920	5474	3970	0	0	0	0	0	15704
			CENRTC	0	0	0	375	225	0	0	0	0	0	0	600
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	2363	471	506	3295	5699	3970	0	0	0	0	0	16304
			Expense Carryover	-272	272	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	2091	743	506	3295	6699	3970	0	0	0	0	0	16304
Total SNF Storage			Expense	10234	5400	12589	21120	12394	3970	0	0	0	0	0	65707
			CENRTC	2546	5931	3010	375	225	0	0	0	0	0	0	12087
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	12780	11331	15599	21495	12619	3970	0	0	0	0	0	77794
			Expense Carryover	-337	337	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-640	640	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	11803	12308	15599	21495	12619	3970	0	0	0	0	0	77794
RL-WM01	6696-1	CSB Project Management	Expense	5448	121	80									5649
			CENRTC												0
			Line Item	2417	6845	501									9763
			GPP												0
			Total BCWS/PMB (1) & (2)	7865	6966	581	0	0	0	0	0	0	0	0	16412
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover	-1116	1116										0
			Total	6749	8082	581	0	0	0	0	0	0	0	0	16412

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-1	CSB Design	Expense		424										424		
			CENRTC													0	
			Line Item	11897	4075	338											16310
			GPP														0
			Total BCWS/PMB (1) & (2)	12321	4075	338	0	0	0	0	0	0	0	0	0	0	16734
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	12321	4075	338	0	0	0	0	0	0	0	0	0	0	16734
RL-WM01	6696-1	CSB Construction	Expense		55	188	44								287		
			CENRTC													0	
			Line Item	24452	33503	6428											64383
			GPP														0
			Total BCWS/PMB (1) & (2)	24507	33691	6472	0	0	0	0	0	0	0	0	0	0	64670
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover	-9781	9781												0
			Total	14726	43472	6472	0	0	0	0	0	0	0	0	0	0	64670
RL-WM01	6696-1	CSB Regulatory Compliance	Expense												0		
			CENRTC													0	
			Line Item	1134	628	45											1807
			GPP														0
			Total BCWS/PMB (1) & (2)	1134	628	45	0	0	0	0	0	0	0	0	0	0	1807
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	1134	628	45	0	0	0	0	0	0	0	0	0	0	1807
RL-WM01	6696-1	MHM Fabrication	Expense		425	104	17								546		
			CENRTC		2460	4952	161									7573	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)	2885	5056	178	0	0	0	0	0	0	0	0	0	0	8119
			Expense Carryover														0
			Capital Equipment Carryover	-1673	1673												0
			Line Item Carryover														0
			Total	1212	6729	178	0	0	0	0	0	0	0	0	0	0	8119
Total Canister Storage Building			Expense	6352	413	141	0	0	0	0	0	0	0	0	0	6906	
			CENRTC	2460	4952	161	0	0	0	0	0	0	0	0	0	0	7573
			Line Item	39900	45051	7312	0	0	0	0	0	0	0	0	0	0	92263
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	48712	50416	7614	0	0	0	0	0	0	0	0	0	0	106742
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-1673	1673	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	-10897	10897	0	0	0	0	0	0	0	0	0	0	0	0
			Total	36142	62986	7614	0	0	0	0	0	0	0	0	0	0	106742

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	Prior Years										TOTAL						
			FUND TYPE	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005		FY2006					
RL-WM01	6696-1	CVD Technical Baseline Development	Expense	2053												2053			
			CENRTC																
			Line Item																
			GPP																
			Total BCWS/PMB (1) & (2)	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	2053	
			Expense Carryover																
			Capital Equipment Carryover																
			Line Item Carryover																
			Total	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2053
RL-WM01	6696-1	CVD Project Management	Expense	85												85			
			CENRTC														0		
			Line Item	174	970	116											1260		
			GPP															0	
			Total BCWS/PMB (1) & (2)	259	970	116	0	0	0	0	0	0	0	0	0	0	0	1345	
			Expense Carryover																
			Capital Equipment Carryover																
			Line Item Carryover																
			Total	259	970	116	0	0	0	0	0	0	0	0	0	0	0	0	1345
RL-WM01	6696-1	CVD Design	Expense	321												321			
			CENRTC														0		
			Line Item	1288	650												1938		
			GPP															0	
			Total BCWS/PMB (1) & (2)	1609	650	0	0	0	0	0	0	0	0	0	0	0	0	2259	
			Expense Carryover																
			Capital Equipment Carryover																
			Line Item Carryover																
			Total	1609	650	0	0	0	0	0	0	0	0	0	0	0	0	0	2259
RL-WM01	6696-1	CVD Construction	Expense													0			
			CENRTC														0		
			Line Item	150	8505	1300											9955		
			GPP															0	
			Total BCWS/PMB (1) & (2)	150	8505	1300	0	0	0	0	0	0	0	0	0	0	0	9955	
			Expense Carryover																
			Capital Equipment Carryover																
			Line Item Carryover																
			Total	150	8505	1300	0	0	0	0	0	0	0	0	0	0	0	0	9955
RL-WM01	6696-1	CVD Regulatory Compliance	Expense													0			
			CENRTC														0		
			Line Item	203	327												530		
			GPP															0	
			Total BCWS/PMB (1) & (2)	203	327	0	0	0	0	0	0	0	0	0	0	0	0	530	
			Expense Carryover																
			Capital Equipment Carryover																
			Line Item Carryover																
			Total	203	327	0	0	0	0	0	0	0	0	0	0	0	0	0	530

4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
Sub-Total Cold Vacuum Drying			Expense	2459	0	0	0	0	0	0	0	0	0	0	2459		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	1815	10452	1416	0	0	0	0	0	0	0	0	0	0	13683
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	4274	10452	1416	0	0	0	0	0	0	0	0	0	0	16142
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	4274	10452	1416	0	0	0	0	0	0	0	0	0	0	16142
			RL-WM01 6696-1 HCS Acquisition Definition			Expense	966	201									
CENRTC	0	0														0	
Line Item	0	0														0	
GPP	0	0														0	
Total BCWS/PMB (1) & (2)	966	201				0	0	0	0	0	0	0	0	0	0	0	1167
Expense Carryover	0	0														0	
Capital Equipment Carryover	0	0														0	
Line Item Carryover	0	0														0	
Total	966	201				0	0	0	0	0	0	0	0	0	0	0	1167
RL-WM01 6696-1 HCS Project Management						Expense	73										
			CENRTC	0												0	
			Line Item	94	1720	1288										3102	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	167	1720	1288	0	0	0	0	0	0	0	0	0	0	3176
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	167	1720	1288	0	0	0	0	0	0	0	0	0	0	3176
			RL-WM01 6696-1 HCS Design			Expense	296										
CENRTC	0															0	
Line Item	1166	2833														3999	
GPP	0	0				0	0	0	0	0	0	0	0	0	0	0	
Total BCWS/PMB (1) & (2)	1462	2833				0	0	0	0	0	0	0	0	0	0	0	4295
Expense Carryover	0	0				0	0	0	0	0	0	0	0	0	0	0	
Capital Equipment Carryover	0	0				0	0	0	0	0	0	0	0	0	0	0	
Line Item Carryover	-115	115														0	
Total	1347	2948				0	0	0	0	0	0	0	0	0	0	0	4295
RL-WM01 6696-1 HCS Construction						Expense											
			CENRTC	0												0	
			Line Item	25	123	6502										6650	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	26	123	6502	0	0	0	0	0	0	0	0	0	0	6650
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	26	123	6502	0	0	0	0	0	0	0	0	0	0	6650

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6896-1	HCS Regulatory Compliance	Expense	300											300
			CENRTC												0
			Line Item		493	226									719
			GPP												0
			Total BCWS/PMB (1) & (2)	300	493	226	0	0	0	0	0	0	0	0	1019
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	300	493	226	0	0	0	0	0	0	0	0	1019
Sub-Total Hot Conditioning System			Expense	1635	201	0	0	0	0	0	0	0	0	0	1836
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	1285	5169	8016	0	0	0	0	0	0	0	0	14470
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	2920	5370	8016	0	0	0	0	0	0	0	0	16306
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	-115	115	0	0	0	0	0	0	0	0	0	0
			Total	2805	5485	8016	0	0	0	0	0	0	0	0	16306
Total Conditioning Projects			Expense	4094	201	0	0	0	0	0	0	0	0	0	4295
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	3100	15621	9432	0	0	0	0	0	0	0	0	28153
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	7194	15822	9432	0	0	0	0	0	0	0	0	32448
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	-115	115	0	0	0	0	0	0	0	0	0	0
			Total	7079	15937	9432	0	0	0	0	0	0	0	0	32448
RL-WM01	6896-0	Total SNF Projects	Expense	167266	86030	111534	108749	93050	31041	0	0	0	0	0	597670
			CENRTC	5524	16944	12082	375	225	0	0	0	0	0	0	35150
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	172790	102974	123616	109124	93275	31041	0	0	0	0	0	632820
			Expense Carryover	-1964	1964	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-1145	1145	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	169681	106083	123616	109124	93275	31041	0	0	0	0	0	632820
RL-WM01	6896-1	Total SNF Projects	Expense	11374	2289	11289	13905	12858	1793	0	0	0	0	0	53508
			CENRTC	2460	4952	161	0	0	0	0	0	0	0	0	7573
			Line Item	43000	60672	16744	0	0	0	0	0	0	0	0	120416
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	56834	67913	28194	13905	12858	1793	0	0	0	0	0	181497
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-1673	1673	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	-11012	11012	0	0	0	0	0	0	0	0	0	0
			Total	44149	80598	28194	13905	12858	1793	0	0	0	0	0	181497

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4.1.2 Budget Authority (BA) by Year by WBS by Fund Type RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Grand Total	SNF Projects		Expense	178640	88319	122823	122654	105908	32834	0	0	0	0	0	651178
			CENRTC	7984	21896	12243	375	225	0	0	0	0	0	0	42723
			Line Item	43000	60672	16744	0	0	0	0	0	0	0	0	120416
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	229624	170887	151810	123029	106133	32834	0	0	0	0	0	814317
			Expense Carryover	-1964	1964	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	-2818	2818	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	-11012	11012	0	0	0	0	0	0	0	0	0	0
			Total	213830	186681	151810	123029	106133	32834	0	0	0	0	0	814317

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Project Integration	Expense	26892	13058	13871	13100	9618	6892	0	0	0	0	0	83431
			CENRTC		0	0	0	0	0	0	0	0	0	0	0
			Line Item		0	0	0	0	0	0	0	0	0	0	0
			GPP		0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	26892	13058	13871	13100	9618	6892	0	0	0	0	0	83431
			Expense Carryover		11										11
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	26892	13069	13871	13100	9618	6892	0	0	0	0	0	83442
RL-WM01	6696-0	Operate K Basins	Expense	27730	12045	12353	12689	13026	6800						84643
			CENRTC	1425											1425
			Line Item												0
			GPP	11											11
			Total BCWS/PMB (1) & (2)	29166	12045	12353	12689	13026	6800	0	0	0	0	0	86079
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	29166	12045	12353	12689	13026	6800	0	0	0	0	0	86079
RL-WM01	6696-0	Maintain K Basins	Expense	32669	5016	5151	5291	5432	2839						56398
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	32669	5016	5151	5291	5432	2839	0	0	0	0	0	66398
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	32669	5016	5151	5291	5432	2839	0	0	0	0	0	66398
RL-WM01	6696-0	Provide/Maintain K Basin Baseline Documentation	Expense	4766	2246	2307	2370	2433	1278						15400
			CENRTC	50											50
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	4816	2246	2307	2370	2433	1278	0	0	0	0	0	15450
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	4816	2246	2307	2370	2433	1278	0	0	0	0	0	15450
RL-WM01	6696-0	K Basin Staff Training	Expense	964	2532	2600	2671	2742	0						11509
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	964	2532	2600	2671	2742	0	0	0	0	0	0	11509
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	964	2532	2600	2671	2742	0	0	0	0	0	0	11509

(1) Budgeted Cost of Work Scheduled (BCWS); equals Performance Measurement Baseline (PMB)
(2) Contingency listed in the Total (BCWS/PMB). A detailed breakout can be found in 4.1.3.A.

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4.1.3B

4.1.3 Cost Baseline (BO) by Year by WBS
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PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Project Direction	Expense		1900	6854	13000	12000	6500						40254		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	0	1900	6854	13000	12000	6500	0	0	0	0	0	0	40254	
			Expense Carryover														0
			Capital Equipment Carryover														0
Total	0	1900	6854	13000	12000	6500	0	0	0	0	0	0	0	40254			
RL-WM01	6696-0	QA/ES&H	Expense	450	785	258	263	270	50						2076		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	450	785	258	263	270	50	0	0	0	0	0	0	2076	
			Expense Carryover														0
			Capital Equipment Carryover														0
Total	450	785	258	263	270	50	0	0	0	0	0	0	0	2076			
RL-WM01	6696-0	Regulatory Compliance	Expense	1760	1356	1332									4448		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	1760	1356	1332	0	0	0	0	0	0	0	0	0	4448	
			Expense Carryover														0
			Capital Equipment Carryover														0
Total	1760	1356	1332	0	0	0	0	0	0	0	0	0	0	4448			
RL-WM01	6696-0	Characterization	Expense	17062	6915	4638									28615		
			CENRTC	6											6		
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	17068	6915	4638	0	0	0	0	0	0	0	0	0	28621	
			Expense Carryover		881											881	
			Capital Equipment Carryover		75											75	
Total	17068	7871	4638	0	0	0	0	0	0	0	0	0	0	29577			
Sub-Total Safety & Quality			Expense	19272	9056	6228	263	270	50	0	0	0	0	0	35139		
			CENRTC	6	0	0	0	0	0	0	0	0	0	0	0	6	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	19278	9056	6228	263	270	50	0	0	0	0	0	0	35145	
			Expense Carryover	0	881	0	0	0	0	0	0	0	0	0	0	881	
			Capital Equipment Carryover	0	75	0	0	0	0	0	0	0	0	0	0	75	
Total	19278	10012	6228	263	270	50	0	0	0	0	0	0	0	36101			

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4.1.3-2

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3 A.

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6896-0	K Basin Management	Expense	5761	3488	3583	3691	3789	1987						23319
			CENRTC												0
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		6761	3488	3583	3691	3789	1987	0	0	0	0	0	23319
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total		6761	3488	3583	3691	3789	1987	0	0	0	0	0	23319
RL-WM01	6896-0	Fuel Relocation Common Operations	Expense	6638		18284	12257	13473	0						50662
			CENRTC												0
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		0	6638	18284	12257	13473	0	0	0	0	0	0	50662
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total		0	6638	18284	12257	13473	0	0	0	0	0	0	50662
		Sub-Total K Basin Operations & Maintenance	Expense	72890	31975	44298	38969	40895	12904	0	0	0	0	0	241931
			CENRTC	1475	0	0	0	0	0	0	0	0	0	0	1475
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	11	0	0	0	0	0	0	0	0	0	0	11
		Total BCWS/PMB (1) & (2)		74376	31975	44298	38969	40895	12904	0	0	0	0	0	243417
		Expense Carryover		0	0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover		0	0	0	0	0	0	0	0	0	0	0	0
		Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0	0
		Total		74376	31975	44298	38969	40895	12904	0	0	0	0	0	243417
RL-WM01	6896-0	FRS K Basin Startup/Training	Expense	163	926	3705	474								5268
			CENRTC												0
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		163	926	3705	474	0	0	0	0	0	0	0	5268
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total		163	926	3705	474	0	0	0	0	0	0	0	5268
RL-WM01	6896-0	FRS K Basin Operations	Expense			2355	6356	3428							12139
			CENRTC												0
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		0	0	2355	6356	3428	0	0	0	0	0	0	12139
		Expense Carryover													0
		Capital Equipment Carryover													0
		Line Item Carryover													0
		Total		0	0	2355	6356	3428	0	0	0	0	0	0	12139

(1) Budgeted Carryover
(2) Contingency
*Note: Scheduled (BCWS) equals Performance Measurement Baseline (PMB). A detailed breakdown can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Testing & MSA of Transportation	Expense			69									69		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	0	0	69	0	0	0	0	0	0	0	0	0	0	69
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total	0	0	69	0	0	0	0	0	0	0	0	0	0	69			
Sub-Total FRS Operations			Expense	163	926	6129	6830	3428	0	0	0	0	0	0	17476		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	163	926	6129	6830	3428	0	0	0	0	0	0	0	17476	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	163	926	6129	6830	3428	0	0	0	0	0	0	0	17476				
RL-WM01	6696-0	Debris Removal Operations	Expense	789	1145	270	1896	2427	4						6531		
			CENRTC												0		
			Line Item												0		
			GPP												0		
			Total BCWS/PMB (1) & (2)	789	1145	270	1896	2427	4	0	0	0	0	0	0	6531	
			Expense Carryover													0	
			Capital Equipment Carryover													0	
			Line Item Carryover													0	
Total	789	1145	270	1896	2427	4	0	0	0	0	0	0	6531				
Sub-Total Debris Removal Operations			Expense	789	1145	270	1896	2427	4	0	0	0	0	0	6531		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0		
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0		
			GPP	0	0	0	0	0	0	0	0	0	0	0	0		
			Total BCWS/PMB (1) & (2)	789	1145	270	1896	2427	4	0	0	0	0	0	0	6531	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	789	1145	270	1896	2427	4	0	0	0	0	0	0	6531				
RL-WM01	6696-1	Cold Vacuum Drying Fac. Startup & MSA	Expense	270	763	2283									3316		
			CENRTC												0		
			Line Item												0		
			GPP												0		
			Total BCWS/PMB (1) & (2)	270	763	2283	0	0	0	0	0	0	0	0	0	3316	
			Expense Carryover													0	
			Capital Equipment Carryover													0	
			Line Item Carryover													0	
Total	270	763	2283	0	0	0	0	0	0	0	0	0	3316				

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

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 WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-1	CVD Operations	Expense			1747	5471	4695							11913
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	0	0	1747	5471	4695	0	0	0	0	0	0	11913
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	0	1747	5471	4695	0	0	0	0	0	0	11913
Sub-Total CVD Operations			Expense	270	763	4030	5471	4695	0	0	0	0	0	0	15229
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	270	763	4030	5471	4695	0	0	0	0	0	0	15229
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	270	763	4030	5471	4695	0	0	0	0	0	0	15229
RL-WM01	6696-0	Water Treatment Operations	Expense	965	373	1646	1239	6351							10574
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	965	373	1646	1239	6351	0	0	0	0	0	0	10574
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	965	373	1646	1239	6351	0	0	0	0	0	0	10574
Sub-Total Water Treatment Operations			Expense	965	373	1646	1239	6351	0	0	0	0	0	0	10574
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	965	373	1646	1239	6351	0	0	0	0	0	0	10574
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	965	373	1646	1239	6351	0	0	0	0	0	0	10574
RL-WM01	6696-0	Sludge Removal Operations	Expense			0	960	2861	471						4292
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	0	0	0	960	2861	471	0	0	0	0	0	4292
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	0	0	960	2861	471	0	0	0	0	0	4292

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
 (2) Contingency included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

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4.1.3 Cost Baseline (BO) by Year by WBS
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Sub-Total Sludge Removal Operations															
			Expense		0	0	0	960	2861	471	0	0	0	0	4292
			CENRTC		0	0	0	0	0	0	0	0	0	0	0
			Line Item		0	0	0	0	0	0	0	0	0	0	0
			GPP		0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)		0	0	0	960	2861	471	0	0	0	0	4292
			Expense Carryover		0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover		0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0
			Total		0	0	0	960	2861	471	0	0	0	0	4292
RL-WM01 6696-1 Hot Cond Sys Startup and ORR															
			Expense			2192	403								2595
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)		0	0	2192	403	0	0	0	0	0	0	2696
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total		0	0	2192	403	0	0	0	0	0	0	2696
RL-WM01 6696-1 HCS Operations															
			Expense				707	1333	628						2668
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)		0	0	0	707	1333	628	0	0	0	0	2668
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total		0	0	0	707	1333	628	0	0	0	0	2668
Sub-Total HCS Operations															
			Expense		0	0	2192	1110	1333	628	0	0	0	0	5263
			CENRTC		0	0	0	0	0	0	0	0	0	0	0
			Line Item		0	0	0	0	0	0	0	0	0	0	0
			GPP		0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)		0	0	2192	1110	1333	628	0	0	0	0	5263
			Expense Carryover		0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover		0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0
			Total		0	0	2192	1110	1333	628	0	0	0	0	5263
RL-WM01 6696-1 CSB Startup and MSA															
			Expense		502	912	2651								4065
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)		502	912	2651	0	0	0	0	0	0	0	4065
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total		502	912	2651	0	0	0	0	0	0	0	4065

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(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years										TOTAL
RL-WM01	6696-1	Operations of CSB	Expense CENRTC	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	17594
			Line Item	2275	7324	6830	1165	0	0	0	0	0	0	0
			GPP											0
			Total BCWS/PMB (1) & (2)	0	2275	7324	6830	1165	0	0	0	0	0	17594
			Expense Carryover											0
			Capital Equipment Carryover											0
			Line Item Carryover											0
			Total	0	2275	7324	6830	1165	0	0	0	0	0	17594
		Sub-Total CSB Operations												
			Expense	502	912	4926	7324	6830	1165	0	0	0	0	17594
			CENRTC	0	0	4926	7324	6830	1165	0	0	0	0	21659
			Line Item	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	502	912	4926	7324	6830	1165	0	0	0	0	21659
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0
			Total	502	912	4926	7324	6830	1165	0	0	0	0	21659
		RL-WM01 6696-0 Sub-Total Operations												
			Expense	74807	34419	52343	49894	55962	13379	0	0	0	0	206804
			CENRTC	1475	0	0	0	0	0	0	0	0	0	1475
			Line Item	0	0	0	0	0	0	0	0	0	0	0
			GPP	11	0	0	0	0	0	0	0	0	0	11
			Total BCWS/PMB (1) & (2)	76293	34419	52343	49894	55962	13379	0	0	0	0	282290
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0
			Total	76293	34419	52343	49894	55962	13379	0	0	0	0	282290
		RL-WM01 6696-1 Sub-Total Operations												
			Expense	772	1675	11148	13905	12858	1793	0	0	0	0	42151
			CENRTC	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	772	1675	11148	13905	12858	1793	0	0	0	0	42151
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0
			Total	772	1675	11148	13905	12858	1793	0	0	0	0	42151
		Total Operations												
			Expense	7579	36094	63491	63799	68820	15172	0	0	0	0	322955
			CENRTC	1475	0	0	0	0	0	0	0	0	0	1475
			Line Item	0	0	0	0	0	0	0	0	0	0	0
			GPP	11	0	0	0	0	0	0	0	0	0	11
			Total BCWS/PMB (1) & (2)	77065	36094	63491	63799	68820	15172	0	0	0	0	324441
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0
			Total	77065	36094	63491	63799	68820	15172	0	0	0	0	324441

(1) Budgeted Over of Work Scheduled (BCWS) equals Performance Measurement Reserve (PMR)
 (2) Contingency
 listed in the Total BCWS/PMB. A detailed breakdown can be found in 4.1.3.A.

SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2006	TOTAL
RL-WM01	6696-0	Essential Systems	CEN/RTC	6452	2453	1413								10318
		Expense	Line Item											0
		GPP												0
		Total BCWS/PMB (1) & (2)		6452	2453	1413	0	0	0	0	0	0	0	10318
		Expense Carryover			500									500
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		6452	2953	1413	0	0	0	0	0	0	0	10318
RL-WM01	6696-0	Cold Test Facility	CEN/RTC	670	615	497	426	353						2561
		Expense	Line Item											0
		CEN/RTC												0
		GPP												0
		Total BCWS/PMB (1) & (2)		670	615	497	426	353	0	0	0	0	0	2561
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		670	615	497	426	353	0	0	0	0	0	2561
RL-WM01	6696-0	Roof Repairs	CEN/RTC	1103										1103
		Expense	Line Item											0
		CEN/RTC												0
		GPP												0
		Total BCWS/PMB (1) & (2)		1103	0	0	0	0	0	0	0	0	0	1103
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		1103	0	0	0	0	0	0	0	0	0	1103
RL-WM01	6696-0	Trailer Moves	CEN/RTC	130										130
		Expense	Line Item											0
		CEN/RTC												0
		GPP												0
		Total BCWS/PMB (1) & (2)		130	0	0	0	0	0	0	0	0	0	130
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		130	0	0	0	0	0	0	0	0	0	130
RL-WM01	6696-0	Basin Personnel Facility Upgrades	CEN/RTC	594	1488									2092
		Expense	Line Item											0
		CEN/RTC												0
		GPP												0
		Total BCWS/PMB (1) & (2)		594	1488	0	0	0	0	0	0	0	0	2092
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		594	1488	0	0	0	0	0	0	0	0	2092

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
(2) Contingency is included in the Total BCWS/PMB. A detailed breakdown can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Basin Facility Support Upgrades	Expense	101	34										135		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	101	34	0	0	0	0	0	0	0	0	0	0	0	135
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total	101	34	0	0	0	0	0	0	0	0	0	0	0	135			
RL-WM01	6696-0	Dose Reduction System	Expense	5963	2041	661									8685		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	5963	2041	661	0	0	0	0	0	0	0	0	0	0	8685
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total	5963	2041	661	0	0	0	0	0	0	0	0	0	0	8685			
RL-WM01	6696-0	Basin Facility Upgrades For Transport	Expense	1062	63										1125		
			CENRTC		4478	2250										6728	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	1062	4541	2250	0	0	0	0	0	0	0	0	0	0	7853
			Expense Carryover		35												35
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total	1062	4576	2250	0	0	0	0	0	0	0	0	0	0	7888			
RL-WM01	6696-0	Deactivation Preparation	Expense		51	250	500	500	250						1551		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	0	51	250	500	500	250	0	0	0	0	0	0	0	1551
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total	0	51	250	500	500	250	0	0	0	0	0	0	0	1551			
Sub-Total Facility Upgrades			Expense	16095	6755	2821	926	853	250	0	0	0	0	0	27700		
			CENRTC	0	4478	2250	0	0	0	0	0	0	0	0	0	6728	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	16095	11233	6071	926	853	250	0	0	0	0	0	0	0	34428
			Expense Carryover	0	535	0	0	0	0	0	0	0	0	0	0	0	535
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	16095	11768	5071	926	853	250	0	0	0	0	0	0	0	34963			

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(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	FRS Technical Baseline	Expense	1848	308	20									2176
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1848	308	20	0	0	0	0	0	0	0	0	2176
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1848	308	20	0	0	0	0	0	0	0	0	2176
RL-WM01	6696-0	FRS Project Management	Expense												2193
			CENRTC	352	407	992	442								0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	352	407	992	442	0	0	0	0	0	0	0	2193
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	352	407	992	442	0	0	0	0	0	0	0	2193
RL-WM01	6696-0	FRS Design	Expense												6586
			CENRTC	3628	2431	527									0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	3628	2431	527	0	0	0	0	0	0	0	0	6586
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	3628	2431	527	0	0	0	0	0	0	0	0	6586
RL-WM01	6696-0	FRS Proc/Fab/Construction	Expense												9909
			CENRTC	66	6013	3830									0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	66	6013	3830	0	0	0	0	0	0	0	0	9909
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	66	6213	3830	0	0	0	0	0	0	0	0	10109
RL-WM01	6696-0	FRS Equipment Test	Expense												1486
			CENRTC	700	786										0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	700	786	0	0	0	0	0	0	0	0	0	1486
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	700	786	0	0	0	0	0	0	0	0	0	1486

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	FRS Regulatory Compliance	Expense	315	649	36									1000		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	315	649	36	0	0	0	0	0	0	0	0	0	0	1000
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
			Total	315	649	36	0	0	0	0	0	0	0	0	0	0	1000
			Sub-Total Fuel Removal														
			Expense	6909	10594	5405	442	0	0	0	0	0	0	0	23350		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	6909	10594	5405	442	0	0	0	0	0	0	0	0	0	23350
			Expense Carryover	0	200	0	0	0	0	0	0	0	0	0	0	0	200
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total	6909	10794	5405	442	0	0	0	0	0	0	0	0	0	23550
			RL-WM01	6696-0	Sludge Removal System	Expense	2966	2229	5561	6117	693						
CENRTC															0		
Line Item															0		
GPP															0		
Total BCWS/PMB (1) & (2)	2966	2229				5561	6117	693	0	0	0	0	0	0	0	17566	
Expense Carryover																0	
Capital Equipment Carryover																0	
Line Item Carryover																0	
Total	2966	2229				5561	6117	693	0	0	0	0	0	0	0	17566	
Sub-Total Sludge Removal																	
			Expense	2966	2229	5561	6117	693	0	0	0	0	0	0	17566		
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0	0	
			GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total BCWS/PMB (1) & (2)	2966	2229	5561	6117	693	0	0	0	0	0	0	0	17566	
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Total	2966	2229	5561	6117	693	0	0	0	0	0	0	0	17566	
			RL-WM01	6696-0	Debris Removal Project	Expense	3593	1117	4060	2872	293						
CENRTC															0		
Line Item															0		
GPP															0		
Total BCWS/PMB (1) & (2)	3593	1117				4060	2872	293	0	0	0	0	0	0	0	11935	
Expense Carryover																0	
Capital Equipment Carryover																0	
Line Item Carryover																0	
Total	3593	1117				4060	2872	293	0	0	0	0	0	0	0	11935	

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SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1

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(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

SPENT NUCLEAR FUEL PROJECT

WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAO #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
		Sub-Total Debris Removal	Expense	3593	1117	4060	2872	293	0	0	0	0	0	0	11935
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
		Total BCWS/PMB (1) & (2)		3593	1117	4060	2872	293	0	0	0	0	0	0	11935
		Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		3593	1117	4060	2872	293	0	0	0	0	0	0	11935
		RL-WM01 669E-0 Water Treatment System	Expense	4654	1502	1802	1015	967	0	0	0	0	0	0	9940
			CENRTC	992	6535	6822									14349
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		5646	8037	8624	1015	967	0	0	0	0	0	0	24285
		Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover	0	430											430
		Line Item Carryover	0												0
		Total		5646	8467	8624	1015	967	0	0	0	0	0	0	24715
		Sub-Total Integrated Water Treatment System	Expense	4654	1502	1802	1015	967	0	0	0	0	0	0	9940
			CENRTC	992	6535	6822									14349
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		5646	8037	8624	1015	967	0	0	0	0	0	0	24285
		Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover	0	430											430
		Line Item Carryover	0												0
		Total		5646	8467	8624	1015	967	0	0	0	0	0	0	24715
		Total Facility Projects	Expense	34217	22187	19649	11372	2806	250	0	0	0	0	0	90491
			CENRTC	992	11013	9072									21077
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
		Total BCWS/PMB (1) & (2)		35209	33210	28721	11372	2806	250	0	0	0	0	0	111665
		Expense Carryover	0	735	0	0	0	0	0	0	0	0	0	0	735
		Capital Equipment Carryover	0	430	0	0	0	0	0	0	0	0	0	0	430
		Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		35209	34376	28721	11372	2806	250	0	0	0	0	0	112733
		RL-WM01 669E-0 MCO Acquisition	Expense	1680	19										1699
			CENRTC	55											55
			Line Item												0
			GPP												0
		Total BCWS/PMB (1) & (2)		1735	19	0	0	0	0	0	0	0	0	0	1754
		Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		1735	19	0	0	0	0	0	0	0	0	0	1754

(1) Budgeted Cost of Work Schedules (BCWS); annual Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakdown can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	MCO Project Management	Expense		720	810	748	274	226						2778		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)		720	810	748	274	226	0	0	0	0	0	0	0	2778
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total			720	810	748	274	226	0	0	0	0	0	0	2778			
RL-WM01	6696-0	MCO Design	Expense		1170	948									2118		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		1170	948	0	0	0	0	0	0	0	0	0	0	2118
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total			1170	948	0	0	0	0	0	0	0	0	0	2118			
RL-WM01	6696-0	MCO Fabrication	Expense			1746	10771	17926	6694						37137		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		0	1746	10771	17926	6694	0	0	0	0	0	0	0	37137
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total			0	1746	10771	17926	6694	0	0	0	0	0	0	37137			
RL-WM01	6696-0	Testing & Qualification of MCO's	Expense		1078	147									1225		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		1078	147	0	0	0	0	0	0	0	0	0	0	1225
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total			1078	147	0	0	0	0	0	0	0	0	0	1225			
RL-WM01	6696-0	MCO Topical Safety Report	Expense		225	256	132								613		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)		225	256	132	0	0	0	0	0	0	0	0	0	613
			Expense Carryover														0
			Capital Equipment Carryover														0
			Line Item Carryover														0
Total			225	256	132	0	0	0	0	0	0	0	0	613			

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

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SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1

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SPENT NUCLEAR FUEL PROJECT

WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2006	TOTAL
		Sub-Total Multi Canister Overpacks (MCOs)												
		Expense		4873	3926	11651	18200	6920	0	0	0	0	0	49570
		CENRTC		55	0	0	0	0	0	0	0	0	0	55
		Line Item		0	0	0	0	0	0	0	0	0	0	0
		GPP		0	0	0	0	0	0	0	0	0	0	0
		Total BCWS/PMB (1) & (2)		4928	3926	11651	18200	6920	0	0	0	0	0	49570
		Expense Carryover		0	0	0	0	0	0	0	0	0	0	0
		Capital Equipment Carryover		0	0	0	0	0	0	0	0	0	0	0
		Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0
		Total		4928	3926	11651	18200	6920	0	0	0	0	0	49570
RL-WM01	6696-0	Case/Transportation												
		Acquisition Definition												
		Expense		1740										1740
		CENRTC												0
		Line Item												0
		GPP												0
		Total BCWS/PMB (1) & (2)		1740	0	0	0	0	0	0	0	0	0	1740
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		1740	0	0	0	0	0	0	0	0	0	1740
RL-WM01	6696-0	Case/Transportation												
		Project Management												
		Expense		486	531	368								1385
		CENRTC												0
		Line Item												0
		GPP												0
		Total BCWS/PMB (1) & (2)		486	531	368	0	0	0	0	0	0	0	1385
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		486	531	368	0	0	0	0	0	0	0	1385
RL-WM01	6696-0	Case/Transportation												
		Design												
		Expense			76									76
		CENRTC		1067	1207									2274
		Line Item												0
		GPP												0
		Total BCWS/PMB (1) & (2)		1067	1283	0	0	0	0	0	0	0	0	2350
		Expense Carryover			65									65
		Capital Equipment Carryover			640									640
		Line Item Carryover												0
		Total		1067	1988	0	0	0	0	0	0	0	0	3055
RL-WM01	6696-0	Case/Transportation												
		Fabrication												
		Expense		793	4724	3010								8527
		CENRTC												0
		Line Item												0
		GPP												0
		Total BCWS/PMB (1) & (2)		793	4724	3010	0	0	0	0	0	0	0	8527
		Expense Carryover												0
		Capital Equipment Carryover												0
		Line Item Carryover												0
		Total		793	4724	3010	0	0	0	0	0	0	0	8527

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakdown can be found in 4.1.3.A

SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Testing & Qualification of Cask	Expense	128											128
			CENRTC												0
			GPP												0
			Total BCWS/PMB (1) & (2)	128	0	0	0	0	0	0	0	0	0	0	128
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	128	0	0	0	0	0	0	0	0	0	0	128
RL-WM01	6696-0	Cask/Transportation Regulatory Compliance	Expense												0
			CENRTC	537	396	64									997
			GPP												0
			Total BCWS/PMB (1) & (2)	537	396	64	0	0	0	0	0	0	0	0	997
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	537	396	64	0	0	0	0	0	0	0	0	997
			Expense												0
			CENRTC	2891	1003	432	0	0	0	0	0	0	0	0	4326
			GPP	1960	5931	3010	0	0	0	0	0	0	0	0	10601
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	4751	6934	3442	0	0	0	0	0	0	0	0	15127
			Expense Carryover	0	65	0	0	0	0	0	0	0	0	0	65
			Capital Equipment Carryover	0	640	0	0	0	0	0	0	0	0	0	640
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	4751	7639	3442	0	0	0	0	0	0	0	0	15832
RL-WM01	6696-0	PUREX Fuel Transfer	Expense												0
			CENRTC	1104											1104
			GPP												0
			Line Item												0
			Total BCWS/PMB (1) & (2)	1104	0	0	0	0	0	0	0	0	0	0	1104
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1104	0	0	0	0	0	0	0	0	0	0	1104
RL-WM01	6696-0	T-Plant	Expense												0
			CENRTC	58	43	43	1405	1045	1427						4021
			GPP												0
			Line Item												0
			Total BCWS/PMB (1) & (2)	58	43	43	1405	1045	1427	0	0	0	0	0	4021
			Expense Carryover												56
			Capital Equipment Carryover												56
			Line Item Carryover												0
			Total	58	99	99	1405	1045	1427	0	0	0	0	0	4077

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL		
RL-WM01	6696-0	Burial Grounds	Expense			11									11		
			CENRTC													0	
			Line Item														0
			GPP														0
			Total BCWS/PMB (1) & (2)	0	0	11	0	0	0	0	0	0	0	0	0	0	11
			Expense Carryover														0
			Capital Equipment Carryover														0
Line Item Carryover														0			
Total	0	0	11	0	0	0	0	0	0	0	0	0	0	11			
RL-WM01	6696-0	PNL Labs, Bldgs. 324, 325, 327	Expense	454	61	103	249	320	33						1220		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	454	61	103	249	320	33	0	0	0	0	0	0	1220	
			Expense Carryover		176												176
			Capital Equipment Carryover														0
Line Item Carryover														0			
Total	454	237	103	249	320	33	0	0	0	0	0	0	0	1396			
RL-WM01	6696-0	308 Annex	Expense	140	127	82	84	253	6						692		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	140	127	82	84	253	6	0	0	0	0	0	0	692	
			Expense Carryover														0
			Capital Equipment Carryover														0
Line Item Carryover														0			
Total	140	127	82	84	253	6	0	0	0	0	0	0	0	692			
RL-WM01	6696-0	FFTF	Expense	85	93	162	1085	3682	2475							7582	
			CENRTC				375	225								600	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	85	93	162	1460	3907	2475	0	0	0	0	0	0	0	8182
			Expense Carryover		40												40
			Capital Equipment Carryover														0
Line Item Carryover														0			
Total	85	133	162	1460	3907	2475	0	0	0	0	0	0	0	8222			
RL-WM01	6696-0	PFP	Expense	1	27	38	28	103	29						226		
			CENRTC													0	
			Line Item													0	
			GPP													0	
			Total BCWS/PMB (1) & (2)	1	27	38	28	103	29	0	0	0	0	0	0	226	
			Expense Carryover														0
			Capital Equipment Carryover														0
Line Item Carryover														0			
Total	1	27	38	28	103	29	0	0	0	0	0	0	0	226			

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

4.1-43

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	N Reactor Fuel Transfer	Expense	24											24
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	24	0	0	0	0	0	0	0	0	0	0	24
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	24	0	0	0	0	0	0	0	0	0	0	24
RL-WM01	6696-0	National Programs	Expense	155	120	67	69	71							482
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	155	120	67	69	71	0	0	0	0	0	0	482
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	155	120	67	69	71	0	0	0	0	0	0	482
Sub-Total Other Hanford Fuel			Expense	2021	471	506	2920	5474	3970	0	0	0	0	0	15362
			CENRTC	0	0	0	375	225	0	0	0	0	0	0	600
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	2021	471	506	3295	5699	3970	0	0	0	0	0	16962
			Expense Carryover	0	272	0	0	0	0	0	0	0	0	0	272
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	2021	743	506	3295	5699	3970	0	0	0	0	0	16234
Total SNF Storage			Expense	9785	5400	12589	21120	12394	3970	0	0	0	0	0	65258
			CENRTC	1915	5931	3010	375	225	0	0	0	0	0	0	11456
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	11700	11331	15599	21495	12619	3970	0	0	0	0	0	76714
			Expense Carryover	0	337	0	0	0	0	0	0	0	0	0	337
			Capital Equipment Carryover	0	640	0	0	0	0	0	0	0	0	0	640
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	11700	12308	15599	21495	12619	3970	0	0	0	0	0	77691
RL-WM01	6696-1	CSB Project Management	Expense	5436	121	80									5637
			CENRTC												0
			Line Item	1399	2761	569									4728
			GPP												0
			Total BCWS/PMB (1) & (2)	6836	2882	649	0	0	0	0	0	0	0	0	10366
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover		1116										1116
			Total	6836	3998	649	0	0	0	0	0	0	0	0	11482

4.1.44

WBS 1.4.1

HNF-SP-1104, Rev 4

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
(2) Costing included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

HNF-SP-1104, Rev 4

4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1987	FY1988	FY1989	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-1	CSB Design	Expense	426											426
			CENRTC												0
			Line Item	11224	7159	524									18907
			GPP												0
			Total BCWS/PMB (1) & (2)	11650	7159	524	0	0	0	0	0	0	0	0	19333
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	11650	7159	524	0	0	0	0	0	0	0	0	19333
RL-WM01	6696-1	CSB Construction	Expense	42	188	44									274
			CENRTC												0
			Line Item	15067	32483	8132									55602
			GPP												0
			Total BCWS/PMB (1) & (2)	15109	32671	8176	0	0	0	0	0	0	0	0	56386
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	15109	42452	8176	0	0	0	0	0	0	0	0	57517
RL-WM01	6696-1	CSB Regulatory Compliance	Expense	544											544
			CENRTC												0
			Line Item	1313	631	104									2048
			GPP												0
			Total BCWS/PMB (1) & (2)	1857	631	104	0	0	0	0	0	0	0	0	2592
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1857	631	104	0	0	0	0	0	0	0	0	2592
RL-WM01	6696-1	MHM Fabrication	Expense	101	104	17									222
			CENRTC												0
			Line Item	788	4952	161									5901
			GPP												0
			Total BCWS/PMB (1) & (2)	889	6056	178	0	0	0	0	0	0	0	0	6133
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	889	6729	178	0	0	0	0	0	0	0	0	7786
			Expense	6549	413	141									7103
			CENRTC												0
			Line Item	788	4952	161									5901
			GPP	29003	43004	9329									61366
			Line Item Carryover												0
			Total BCWS/PMB (1) & (2)	36340	48399	9631	0	0	0	0	0	0	0	0	94370
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	36340	60969	9631	0	0	0	0	0	0	0	0	10897
															10897
			Total	36340	60969	9631	0	0	0	0	0	0	0	0	10897

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
 (2) Contingency is included in the Total (RL WBS) only. A (minimum) residual can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-1	CVD Technical Baseline Development	Expense	2088											2088
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	2088	0	0	0	0	0	0	0	0	0	0	2088
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	2088	0	0	0	0	0	0	0	0	0	0	2088
RL-WM01	6696-1	CVD Project Management	Expense	213											213
			CENRTC												0
			Line Item	102	970	116									1188
			GPP												0
			Total BCWS/PMB (1) & (2)	315	970	116	0	0	0	0	0	0	0	0	1401
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	315	970	116	0	0	0	0	0	0	0	0	1401
RL-WM01	6696-1	CVD Design	Expense	368											368
			CENRTC												0
			Line Item	1422	650										2072
			GPP												0
			Total BCWS/PMB (1) & (2)	1790	650	0	0	0	0	0	0	0	0	0	2440
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1790	650	0	0	0	0	0	0	0	0	0	2440
RL-WM01	6696-1	CVD Construction	Expense												0
			CENRTC												0
			Line Item	162	8168	1300									9630
			GPP												0
			Total BCWS/PMB (1) & (2)	162	8168	1300	0	0	0	0	0	0	0	0	9630
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	162	8168	1300	0	0	0	0	0	0	0	0	9630
RL-WM01	6696-1	CVD Regulatory Compliance	Expense												0
			CENRTC												0
			Line Item	466	327										793
			GPP												0
			Total BCWS/PMB (1) & (2)	466	327	0	0	0	0	0	0	0	0	0	793
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	466	327	0	0	0	0	0	0	0	0	0	793

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

4.1-46

BIENNIAL NUCLEAR FUEL PROJECT
WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS
RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Sub-Total Cold Vacuum Drying			Expense	2669	0	0	0	0	0	0	0	0	0	0	2669
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	2152	10115	1416	0	0	0	0	0	0	0	0	13683
			GPP	0	0	0	0	0	0	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	4821	10115	1416	0	0	0	0	0	0	0	0	16352
			Expense Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Capital Equipment Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item Carryover	0	0	0	0	0	0	0	0	0	0	0	0
			Total	4821	10115	1416	0	0	0	0	0	0	0	0	16352
RL-WM01	6696-1	HCS Acquisition Definition	Expense	1043	201										1244
			CENRTC												0
			Line Item												0
			GPP												0
			Total BCWS/PMB (1) & (2)	1043	201	0	0	0	0	0	0	0	0	0	1244
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	1043	201	0	0	0	0	0	0	0	0	0	1244
RL-WM01	6696-1	HCS Project Management	Expense	116											116
			CENRTC												0
			Line Item	61	1726	1288	746								3821
			GPP												0
			Total BCWS/PMB (1) & (2)	177	1726	1288	746	0	0	0	0	0	0	0	3937
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	177	1726	1288	746	0	0	0	0	0	0	0	3937
RL-WM01	6696-1	HCS Design	Expense	230											230
			CENRTC												0
			Line Item	765	3163										3928
			GPP												0
			Total BCWS/PMB (1) & (2)	995	3163	0	0	0	0	0	0	0	0	0	4158
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover		115										115
			Total	995	3278	0	0	0	0	0	0	0	0	0	4273
RL-WM01	6696-1	HCS Construction	Expense												0
			CENRTC												0
			Line Item		123	4515	1242								5880
			GPP												0
			Total BCWS/PMB (1) & (2)	0	123	4515	1242	0	0	0	0	0	0	0	5880
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	0	123	4515	1242	0	0	0	0	0	0	0	5880

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
(2) Contingency is included at the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

SPENT NUCLEAR FUEL PROJECT WBS 1.4.1

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4.1.3 Cost Baseline (BO) by Year by WBS RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-1	HCS Regulatory Compliance	Expense	303											303
			CENRTC												0
			Line Item												0
			GPP	7	493	226									726
			Total BCWS/PMB (1) & (2)	310	493	226	0	0	0	0	0	0	0	0	1023
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover												0
			Total	310	493	226	0	0	0	0	0	0	0	0	1023
		Sub-Total Hot Conditioning System	Expense												
			CENRTC	1692	201	0	0	0	0	0	0	0	0	0	1893
			Line Item	0	0	0	0	0	0	0	0	0	0	0	0
			GPP	833	5505	6029	1988	0	0	0	0	0	0	0	14359
			Total BCWS/PMB (1) & (2)	2325	5706	6029	1988	0	0	0	0	0	0	0	16248
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover		115	0	0	0	0	0	0	0	0	0	115
			Total	2325	5821	6029	1988	0	0	0	0	0	0	0	16363
		Total Conditioning Projects	Expense	4351	201	0	0	0	0	0	0	0	0	0	4552
			CENRTC	0	0	0	0	0	0	0	0	0	0	0	0
			Line Item	2865	15920	7445	1988	0	0	0	0	0	0	0	28038
			GPP	7346	15821	7445	1988	0	0	0	0	0	0	0	32600
			Total BCWS/PMB (1) & (2)	7346	15821	7445	1988	0	0	0	0	0	0	0	32600
			Expense Carryover												0
			Capital Equipment Carryover												0
			Line Item Carryover		115	0	0	0	0	0	0	0	0	0	115
			Total	7346	15936	7445	1988	0	0	0	0	0	0	0	32715
		RL-WM01 6696-0 Total SNF Projects	Expense	164973	86030	115334	108749	93050	31041	0	0	0	0	0	555377
			CENRTC	4388	16944	12062	375	225	0	0	0	0	0	0	34014
			Line Item	11	0	0	0	0	0	0	0	0	0	0	0
			GPP	169372	102974	123616	109124	93275	31041	0	0	0	0	0	11
			Total BCWS/PMB (1) & (2)	169372	102974	123616	109124	93275	31041	0	0	0	0	0	628402
			Expense Carryover												1984
			Capital Equipment Carryover		1145	0	0	0	0	0	0	0	0	0	1145
			Line Item Carryover		0	0	0	0	0	0	0	0	0	0	0
			Total	169372	108083	123616	109124	93275	31041	0	0	0	0	0	632511
		RL-WM01 6696-1 Total SNF Projects	Expense	11682	2289	11289	13905	12858	1793	0	0	0	0	0	53816
			CENRTC	788	4652	161	0	0	0	0	0	0	0	0	5901
			Line Item	31988	5854	16774	1988	0	0	0	0	0	0	0	109404
			GPP	44458	6585	28224	15893	12858	1793	0	0	0	0	0	0
			Total BCWS/PMB (1) & (2)	44458	6585	28224	15893	12858	1793	0	0	0	0	0	169121
			Expense Carryover												0
			Capital Equipment Carryover		1671	0	0	0	0	0	0	0	0	0	1671
			Line Item Carryover		0	11012	0	0	0	0	0	0	0	0	11012
			Total	44458	76580	28224	15893	12858	1793	0	0	0	0	0	181006

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB).
(2) Consignments - listed in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A.

4.1.3 Cost Baseline (BO) by Year by WBS
 RL WBS 1.4.1

PAD #	ADS #	WBS TITLE	FUND TYPE	Prior Years	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Grand Total SNF Projects															
		Expense		176655	88319	122823	122654	105908	32834	0	0	0	0	0	649193
		CENRTC		5176	21896	12243	375	225	0	0	0	0	0	0	39915
		Line Item		31988	58654	16774	1988	0	0	0	0	0	0	0	109404
		GPP		11	0	0	0	0	0	0	0	0	0	0	11
		Total BCWS/PMB (1) & (2)		213830	168869	151840	125017	106133	32834	0	0	0	0	0	798523
		Expense Carryover		0	1964	0	0	0	0	0	0	0	0	0	1964
		Capital Equipment Carryover		0	2818	0	0	0	0	0	0	0	0	0	2818
		Line Item Carryover		0	11012	0	0	0	0	0	0	0	0	0	11012
		Total		213830	184663	151840	125017	106133	32834	0	0	0	0	0	814317

SPENT NUCLEAR FUEL PROJECT
 WBS 1.4.1

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4.1-49

(1) Budgeted Cost of Work Scheduled (BCWS) equals Performance Measurement Baseline (PMB)
 (2) Contingency is included in the Total BCWS/PMB. A detailed breakout can be found in 4.1.3.A

4.1.3.A Contingency by Year by WBS
 RL WBS 1.4.1

PBS #	ADS #	WBS TITLE	FUND TYPE	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
RL-WM01	6696-0	Project Direction	Expense		4854	11000	10000	4500						30354
			CENRTC											0
			Line Item											0
			GPP											0
			Total Contingency	0	4854	11000	10000	4500	0	0	0	0	0	30354
RL-WM01	6696-0	FRS Proc/Fab/ Construction	Expense	497	603									1100
			CENRTC											0
			Line Item											0
			GPP											0
			Total Contingency	497	603	0	0	0	0	0	0	0	0	1100
Total Facility Projects			Expense	497	603	0	0	0	0	0	0	0	0	1100
			CENRTC											0
			Line Item											0
			GPP											0
			Total Contingency	497	603	0	0	0	0	0	0	0	0	1100
RL-WM01	6696-1	CSB Project Management	Expense											0
			CENRTC											0
			Line Item	1992										1992
			GPP											0
			Total Contingency	1992	0	0	0	0	0	0	0	0	0	1992
RL-WM01	6696-1	MHM Fabrication	Expense											0
			CENRTC	200										200
			Line Item											0
			GPP											0
			Total Contingency	200	0	0	0	0	0	0	0	0	0	200
Total Canister Storage Building			Expense	0	0	0	0	0	0	0	0	0	0	0
			CENRTC	200	0	0	0	0	0	0	0	0	0	200
			Line Item	1992	0	0	0	0	0	0	0	0	0	1992
			GPP	0	0	0	0	0	0	0	0	0	0	0
			Total Contingency	2192	0	0	0	0	0	0	0	0	0	2192
RL-WM01	6696-1	Cold Vacuum Drying Construction	Expense											0
			CENRTC											0
			Line Item	500										500
			GPP											0
			Total Contingency	500	0	0	0	0	0	0	0	0	0	500

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SPENT NUCLEAR FUEL PROJECT
 WBS 1.4.1

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SPENT NUCLEAR FUEL PROJECT

WBS 1.4.1

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4.1.3.A Contingency by Year by WBS RL WBS 1.4.1

FUND TYPE	ADS #	WBS TITLE	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
Expense	RL-WM01 6696-1	Hot Conditioning System											0
Line Item		Construction	0	628									628
GPP													0
Total Contingency			0	628	0	0	0	0	0	0	0	0	628
Total Conditioning Projects													
Expense			0	0	0	0	0	0	0	0	0	0	0
CENRTC			0	0	0	0	0	0	0	0	0	0	0
Line Item			500	628	0	0	0	0	0	0	0	0	1128
GPP			0	0	0	0	0	0	0	0	0	0	0
Total Contingency			500	628	0	0	0	0	0	0	0	0	1128
Expense	RL-WM01 6696-0	Total SNF Project	497	5457	11000	10000	4500	0	0	0	0	0	31454
CENRTC			0	0	0	0	0	0	0	0	0	0	0
Line Item			0	0	0	0	0	0	0	0	0	0	0
GPP			0	0	0	0	0	0	0	0	0	0	0
Total Contingency			497	5457	11000	10000	4500	0	0	0	0	0	31454
Expense			0	0	0	0	0	0	0	0	0	0	0
CENRTC			200	0	0	0	0	0	0	0	0	0	200
Line Item			2492	628	0	0	0	0	0	0	0	0	3120
GPP			0	0	0	0	0	0	0	0	0	0	0
Total Contingency			2692	628	0	0	0	0	0	0	0	0	3320
Expense			497	5457	11000	10000	4500	0	0	0	0	0	31454
CENRTC			200	0	0	0	0	0	0	0	0	0	200
Line Item			2492	628	0	0	0	0	0	0	0	0	3120
GPP			0	0	0	0	0	0	0	0	0	0	0
Total Contingency			3189	6085	11000	10000	4500	0	0	0	0	0	34774

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This page reserved for **Exhibit 4.1.4 Cost Baseline Execution Year by Month.**

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4.2 Basis of Estimate

The cost estimates for the Spent Nuclear Fuel (SNF) project have been prepared to provide a cost profile of the remaining work scope required to remove 2100 Metric Tons of spent nuclear fuel from the K-Basins to dry interim storage in the Canister Storage Building, management of Other Hanford SNF, and planning for transition of the K-Basin facilities to Transition Projects. Estimate to Complete (ETC) costs have been reviewed by individual Sub-Projects (listed below) and assessed for reasonableness. Estimates are identified as having used analogy, trend analysis, expert opinion, parametric methodology, or comparable historical activities as their basis. Cost estimates have been developed and maintained throughout the life of each Sub-Project.

With the scope of the SNF Project activities defined, cost estimates and schedules have been developed. The complexity of developing these estimates for a resource loaded schedule required the involvement of many disciplines covering the entire spectrum of planning, scheduling, and estimating. The disciplines that provided input included technical, operational, project management, maintenance, engineering, safety, health physics, quality assurance, and security.

The estimates used current Company direct-labor rates escalated using RL-approved escalation rates. The overhead factors are shown below:

General & Administration (G&A) & PHMC Fee	16.7%
Material Procurement Rate (MPR)	7.0%

The following estimate packages are located with the Planning & Schedule Integration Group at 2751/200E:

- Safety & Quality
- Project Integration
- Operations
- Facility Upgrades
- Fuel Retrieval
- Sludge Retrieval
- Debris Removal
- Integrated Water Treatment
- Multi-Canister Overpack
- Cask/Transportation
- Other Hanford Fuel
- Canister Storage Building
- Hot Conditioning System
- Cold Vacuum Drying System

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Exhibit: Program Average FTE Projections by COCS Categories
 Project Hanford Breakdown Structure/Title: 1.4.1 Spent Nuclear Fuel Project

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
C000	Crafts	78	78	80	80	35
E000	Engineers	190	165	155	105	50
G000	General Admin, Secretarial & Clerical Support	54	52	47	42	25
L000	Laborers and General Service Workers	9	11	13	12	8
M000	Gen Mgrs, Exec, 1st Line Suprv'sr & Prog/Proj Mgrs	70	67	63	50	20
P000	Professional Administrative & Related Occupations	47	45	42	38	20
R000	Operators	60	100	120	120	54
S000	Scientists	1	1	1		
T000	Technicians	52	71	73	70	22
	Total	561	590	594	517	234

NOTE: Includes DESH, major subcontractors, and ENCO personnel.

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Exhibit: Program Average FTE Projections by COCS Categories
 Project Hanford Breakdown Structure/Title: Spent Nuclear Fuel Project

Includes Major Subcontractor and EntCo FTEs

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
C000	Crafts	78	78	80	80	35					
C010	Carpenters	4	4								
C020	Electricians	17	17								
C030	Heating Air-Conditioning and Refrig Mechanics (HVAC)										
C040	Machinists										
C050	Masons										
C060	Millwrights	19	19								
C070	Painters	6	6								
C080	Plumbers and Pipefitters	16	16								
C090	Structural and Metal Workers	2	2								
C100	Vehicle and Mobile Equipment Mechanics										
C110	Welders										
C120	Other Crafts	14	14								
E000	Engineers	190	165	155	105	50					
E010	Chemical Engineers	23	15								
E020	Civil Engineers	5	5								
E040	Electrical Engineers	7	7								
E050	Environmental Engineers	3	3								
E060	Industrial Engineers										
E070	Mechanical Engineers	34	34								
E080	Nuclear Engineers	1	1								
E090	Petroleum/Mining Engineers										
E100	Plant Engineers	53	45								
E110	Quality Assurance/Control Engineers	5	5								
E120	Safety Engineers	6	6								
E130	Other Engineers	51	42								
E140	Construction Engineers	2	2								
G000	General Admin, Secretarial & Clerical Support	54	52	47	42	25					
G010	Administrative Assistants	8	7								
G020	Office Clerks (General)	17	16								
G030	Office Clerks (Specialized)	7	7								
G040	Secretaries	22	22								
G050	Typist and Word Processors										
G060	Other General Admin, Secretarial and Clerical Support										

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Exhibit: Program Average FTE Projections by COCS Categories
 Project Hanford Breakdown Structure/Title: Spent Nuclear Fuel Project

Includes Major Subcontractor and EntCo FTEs

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
L000	Laborers and General Service Workers	9	11	13	12	8					
L010	Firefighters										
L020	Food Service Workers										
L030	Janitors and Cleaners	3	3								
L040	Laundry Workers										
L050	Handlers, Helpers and Laborers (General)	1	2								
L060	Handlers, Helpers and Laborers (Specialized)										
L070	Light Vehicle Drivers	5	5								
L080	Security Guards										
L090	Other Laborers and General Services Workers		1								
M000	Gen Mgrs, Exec, 1st Line Suprv'sr & Prog/Proj Mgrs	70	67	63	50	20					
M010	First Line Supervisors	25	22								
M020	General Managers and Executives	24	24								
M030	Project and Program Managers	6	6								
M040	Other Managers	15	15								
P000	Professional Administrative & Related Occupations	47	45	42	38	20					
P010	Accountants and Auditors	10	9								
P020	Architects										
P030	Buyers, Procurement and Contracting Specialists	5	5								
P040	Communications Specialists										
P050	Compliance Inspectors										
P060	Computer Systems Analysts										
P070	Cost Estimators and Planners and Schedulers	15	14								
P080	Health Physicists	7	7								
P090	Industrial Hygienists	1	1								
P100	Lawyers										
P110	Personnel and Labor Relations Specialists										
P120	Physicians										
P130	Physician Assist, Nurses & Oth Medical Supt Occup'tns										
P140	Safeguards and Other Security Specialists	2	2								
P150	Trainers	4	4								
P160	Technical Writers, and Editors										
P170	Other Administrative & Professional Other Occupations	3	3								

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Exhibit: Program Average FTE Projections by COCS Categories
Project Hanford Breakdown Structure/Title: Spent Nuclear Fuel Project
Includes Major Subcontractor and EntCo FTEs

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
R000	Operators	60	100	120	120	54					
R010	Chemical System Operators										
R020	Drillers										
R030	Material Moving Equipment Operators										
R040	Nuclear Plant Operators	40	80								
R050	Nuclear Waste Process Operators										
R060	Production Systems Operators	3	3								
R070	Utilities Operators	17	17								
R080	Other Operators	1	1	1	0	0					
S000	Scientists										
S010	Chemists										
S020	Environmental Scientists	1	1								
S030	Geologists										
S040	Life Scientists										
S050	Materials Scientists										
S060	Mathematicians										
S070	Physicists										
S080	Social Scientists										
S090	Other Scientists										
S100	Computer Scientists										
T000	Technicians	52	71	73	70	22					
T010	Computer Operator/Coders										
T020	Drafters	3	3								
T030	Engineering Technicians	5	5								
T040	Environmental Sciences Technicians										
T050	Health Physics Technicians	41	60								
T060	Industrial Safety and Health Technicians										
T070	Instrument and Control Technicians	3	3								
T080	Laboratory Technicians										
T090	Media Technicians										
T100	Survey and Mapping										
T110	Other Technicians										
	Total	561	590	594	517	234					

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5.0 ASSUMPTIONS AND RISKS

5.1 Assumptions

5.1.1 Technical

Key SNF Project technical assumptions include:

- Characterization results -- The Project technical baseline was based on the assumption that the K West fuel was in a less degraded state than the K East fuel because the K West fuel had been treated with corrosion inhibitor and sealed. As a result, certain modifications to the K West Basin were eliminated from the Project scope that was assumed necessary for the K East Basin. The recent completion of the K West Basin "lift and look" campaign to validate this assumption revealed that the K West fuel was in a more degraded state than previously assumed. The cesium levels in the canisters were higher than expected and the amount of canister sludge was greater than assumed. Based on these results, the baseline assumption is modified to recognize that the K West fuel is roughly equivalent to the K East fuel, but no worse.
- RCRA Applicability -- The *Resource Conservation and Recovery Act* (RCRA) does not apply to SNF.
- Sludge Disposition -- The current baseline assumes that K East Basin floor and canister sludge and K West Basin canister sludge will be managed as SNF while in the basins and will be transferred to the tank farms for management within the double-shell tank system after removal from the basins. Recent K East Basin sludge sampling has identified three locations where the PCB content exceeds the Toxic Substances Control Act (TSCA) limits. Resolution of technical issues associated with sludge disposition is included in the baseline. Any SNF sludge pretreatment requirements identified as a result of the resolution of either TSCA or technical issues will be incorporated through the baseline change control process.
- Integrated Water System effectiveness -- The Integrated Water System will be able to remove contaminants from the water as canisters are opened in the K West Basin. The IWTS will prevent excessive airborne contaminants and will prevent the ion exchange modules from becoming transuranic. Based on preliminary characterization data, K West basin canisters have an average of 2.14 Ci cesium-137. It is assumed that K West basin

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has no more than 6.2 cubic meters of canister sludge and K East basin has no more than 10.6 cubic meters. Excess water removed from the basins will be transferred to the 200 Area Effluent Treatment Facility. No polychlorinated biphenyls (PCBs) are assumed to be present in the canister sludge.

- CVD Water Management -- The original baseline defined a process in which water extracted from MCOs during cold vacuum drying would be disposed of through the 200 Area Effluent Treatment Facility (ETF). It has subsequently been determined that the CVD process results in effluent which will not meet the acceptance criteria for the 200 Area ETF and that an alternate strategy for water management is required. Based on an analysis of alternatives, the baseline has been changed to require the return of CVD process water to the K West Basin IWTS through the lines flowing directly to the ion exchange system.
- Office of Civilian Radioactive Waste Management (OCRWM) QA Requirements -- Analysis of changes to the existing SNF Project QA program and associated costs has been completed. However, the identified changes have not been finalized for implementation. The OCRWM requirements will be implemented on the project when SD-SNF-QAPP-004, Rev 1 is submitted to RL by FDH and approved by RL. Rough order of magnitude funding to implement the OCRWM requirements has been identified in this MYWP. Changes to both cost baselines may be necessary when the QAPP is approved.
- CSB/SNF Project scope -- The Canister Storage Building is being designed for SNF storage with an option to store high-level waste canisters; no plans are being made for storage of other materials, such as Cs/Sr capsules.
- Sealed MCO Staging -- The SNF Project design was based on the strategy that the Multi-Canister Overpacks (MCO) would be vented to the Canister Storage Building (CSB) tubes during the staging period which precedes hot conditioning. A key management decision has been made to change from a vented to a sealed MCO during staging. The decision to seal MCOs impacts the technical, schedule, and cost baselines, design analyses, and some specific building/equipment design features. In the vented condition, hydrogen would be vented continuously from the MCO to the CSB storage tubes where it would have been periodically purged. With the sealed configuration, the hydrogen will be contained within the MCO and purged as an initial step prior to hot conditioning. Specific impacts include changes to CSB storage tubes, storage tube plugs, MCO

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Handling Machine and instrumentation system, and design or operational impacts in the Hot Conditioning System (HCS) associated with MCO overpressure blowdown.

- NRC Equivalency (tornado hardening) -- The Project has accepted NRC equivalency requirements for the Project to establish a degree of safety equivalence with NRC-licensed facilities. This requires that the CSB and Cold Vacuum Drying (CVD) facility be designed and constructed to withstand tornado loadings which are not included in DOE design requirements. Primary impacts are in design and construction of these facilities, especially for the CSB operating shelter and service building and the CVD walls and roof.
- HCS pressure management -- An enabling assumption for the current HCS design is that the rupture disk will not actuate while an MCO is in the HCS process pit. Fuel characterization studies and computer modeling of fuel reactions are being conducted to validate this assumption. Until these studies demonstrate that this assumption is valid it will remain as an open issue.
- Interim storage period -- K Basins SNF and other Hanford SNF will be interim stored in the CSB or in the 200 Area ISA, pending decisions on final disposition. The design life of the CSB is 40 years. Steps have been taken to allow a potential increase in service life of interim storage facilities beyond 40 years to minimize the impact of uncertainties in the availability of a permanent repository.
- K Basins turnover -- The decision to transfer the K Basins to the Transition Projects at the conclusion of the SNF Project changed the post-2001 responsibility for K Basins water and facilities from the SNF Project to the Transition Projects. A contractor-level Memorandum of Understanding has proposed programmatic interfaces at turnover which may result in some differences to the SNF Project baseline to improve the efficiency of turnover between the PHMC major subcontractors. The Revision 0 MYWP baseline reflects the transfer of the basin from the SNF Project to the Transition Projects. Any changes proposed by the PHMC will be submitted to RL for approval through the appropriate change control process.
- Facilities Transition Projects interface: 300 Area facilities -- Budget and schedule within Facilities Transition Projects for packaging and removal of 300 Area Light Water Reactor (LWR) fuel is currently being modified. Schedules, budgets, and technical strategy are being re-evaluated within the SNF Project and will likely require changes to Project baselines (which currently includes LWR fuel being transferred to the 400 Area Interim

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Storage Area (ISA) prior to transfer to the 200 Area ISA when it is available). Anticipated changes include not transferring LWR fuel to the 400 Area ISA prior to its final move to the 200 Area Interim Storage Area and possible storage of fuel within the CSB.

- HSTB Database Changes -- Changes to the SNF Project technical baseline are anticipated due to changes to the structure of baseline documentation as reflected in the HSTB data (Section 1, Exhibit 1A) and the life cycle requirements that the SNF Project facilities and sub-projects must meet. The technical baseline will be revised to incorporate these and other changes after the July 1997 revision of the HSTB database.
- FFTF fuel disposition -- Sodium-bonded FFTF fuel will be transferred offsite for treatment. Non-self protecting fuel will be stored in the Plutonium Finishing Plant if necessary for safeguards purposes pending decisions on final disposition.

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5.1.2 Cost/Schedule

The following order of magnitude costs were included in the MYWP from FY 1997 to FY 2001.:

- \$3.0M was used as an order of magnitude estimate for KE Basin Tritium Level Reduction.
- \$.5M was used as an order of magnitude estimate for QA Program/OCRWM to cover cost associated with outstanding QA Program compliance issues and incorporation of future OCRWM requirements.
- \$2.5M was used as an order of magnitude estimate for Sludge Disposal to cover additional scope arising from Regulatory requirements regarding PCB management and disposal and Task Waste Remediation System (TWRS) requirements for preprocessing of sludge prior to shipment to the Tank Farms.
- \$3.0M was used as an order of magnitude estimate for KW Integrated Water Treatment System (IWTS) design. This entails replicating the KE design in KW. The estimate was based on the current estimates for KE IWTS.
- \$1.0M was used as an order of magnitude estimate for IWTS (Cold Vacuum Drying Offload Station). Constructing a CVD offload station where CVD process return water is returned to the basin IWTS in the lines flowing directly to the ion exchange media.

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5.2 RISKS

5.2.1 Technical

- KE Basin Tritium Level Reduction -- Reduction of tritium levels in K East Basin may be required prior to final water removal to provide maximum protection to the environment and to comply with the re-negotiated Tri-Party Agreement (TPA). This will be determined when agreement is reached with regulators. \$9M was requested in FY 2001 but is not part of this Baseline.
- MCO detonation -- If analysis or testing cannot show that the current design precludes hydrogen/oxygen detonation within MCOs, additional process steps and equipment may have to be added to confirm MCO oxygen generation rates at a process station or in the CSB.
- Receipt of pressurized MCO in HCS -- The current design basis assumes that actuation of the MCO pressure relief system does not occur in the HCS. If analyses, tests, or administrative controls cannot preclude MCO pressurization during staging, a safety class inerting system would have to be added to the HCS to accommodate a pressurized MCO. As an alternate, the CSB service station could be upgraded to vent pressurized MCOs prior to transfer to the HCS. The magnitude of change for either option could exceed Revision 0 MYWP budgets.
- Beyond-design-basis accident analysis -- The fast track schedule associated with the SNF Project has dictated the need for process development concurrent with the detailed design and safety analysis activities. As a result, the beyond-design-basis accident analysis is yet to be performed as part of the final Safety Analysis Report preparation. If this analysis invalidates any of the key enabling assumptions, an assessment of the required facility changes will be made.
- N Basin fuel chips -- The recent discovery of fuel chips in the N Basin may require SNF Project work scope changes. Because the Environmental Restoration Management Contractor and its subcontractors do not have nuclear material accountability within their authorized workscope, the PHMC may need to take responsibility for the material. The current baseline assumes that the SNF Project does not receive fuel chips from N Basin. Additional workscope, cost, and schedule may need to be added to accommodate packaging, transport, and storage of the N Basin if it becomes the

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responsibility of the SNF Project. Change Control will be implemented prior to addition of this workscope.

- South load-out pit accident analysis -- Assumptions currently contained in the transport cask drop accident analysis are undergoing internal and external review. Any unresolved concerns related to these assumptions may dictate a need for mitigating design features currently not within the Project scope.
- Current sludge and liquid/gas -- characterization data and "lift and look" estimations indicate that the problems associated with the K-West Integrated Water Treatment System are significantly more difficult than previously assumed. These include higher than anticipated sludge volumes and Cs-137 concentrations. Issues in KE include weasel pit heat generation, criticality and hydrogen generation.
- Ion Exchange Column (IXC) Disposition -- Funds are budgeted in FY 1998 (\$398K) and 2000 (\$5971K) for disposition of 33 transuranic (TRU)-contaminated and 6 low-level IXCs stored in the K West Basin Chlorine Vault and 6 TRU-contaminated IXCs stored in the K East Basin. The TRU contamination, the high radiation fields (up to 100 R), and the hydrogen generated by the IXCs pose challenges that require the development of special packaging for transport and storage. The funds budgeted were based on estimates with minimal information about the packaging requirements. Additional costs and workscope may be encountered as development and fabrication of the packages and the disposition of the IXCs proceed.

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5.2.2 Cost & Schedule

Contingency breakdown from FY 1997 to FY 2001:

- K West Sludge Disposition -- Current Baseline is to transfer K West floor sludge to Transition Projects, if during fuel removal operations it is found that the K West sludge needs to be handled as transuranic, it will be incorporated into the Baseline. \$4M has been allocated as contingency.
- Expense -- 5.2% or \$11.8M has been allocated for Expense Contingency to cover design evolutions and process improvements that will be found as part of the Cold Test Facility and Fuel Movement Operations. Non-scope related cost impacts.
- Operations -- 5.9% or \$14.5M has been allocated for Operations Contingency due to the first of a kind operations.
- Line Item -- 3.5% or \$3.1M has been allocated for Line Item Contingency for non-scope related impacts.
- FRS -- 6.6% or \$1.1M has been allocated for FRS Contingency for non-scope related impacts.
- MHM -- 2.9% or \$.2M has been allocated for MHM Contingency for non-scope related impacts.

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