Post 2006 Completion

Program Mission

The Defense Environmental Restoration and Waste Management, Post 2006 Completion account, includes projects currently planned to require funding beyond 2006. Within the Defense Environmental Restoration and Waste Management appropriation, this account includes a significant number of projects at the largest Department of Energy sites--the Office of River Protection and the Richland Operations Office at the Hanford site in Washington; the Savannah River site in South Carolina; the Idaho National Engineering and Environmental Laboratory in Idaho; the Oak Ridge Reservation in Tennessee--as well as, the Los Alamos National Laboratory in New Mexico; the Lawrence Livermore National Laboratory in California; the Nevada Test Site in Nevada; and the Waste Isolation Pilot Plant in Carlsbad, New Mexico. A variety of multi-site activities are also funded in this account, including the government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund.

After completion of cleanup, it will be necessary for the EM program to maintain a presence at most sites to monitor, maintain, and provide information on the contained residual contamination. These activities will be necessary to maintain the reduction in risk to human health. Such long-term stewardship will include passive or active controls and, often, treatment of groundwater over a long period of time. The extent of long-term stewardship required at a site will reflect the end-state developed in consultation among the U.S. Department of Energy, Congress, Tribal Nations, representatives of regulatory agencies and State and local authorities, representatives of non-governmental organizations, and interested members of the general public.

Program Goal

Accelerating cleanup and project completion are central goals of the EM program. Environmental Management sites are working to reduce outyear costs by completing projects as soon and as efficiently as possible. For those sites in the Post 2006 Completion account, treatment will continue for the remaining "legacy" waste streams.

Program Objectives

Address environmental risks across the Department of Energy complex and ensure that facilities and activities pose no undue risks to the public and worker safety and health. This includes safe containment of high-level waste tanks at the Office of River Protection in Hanford, Washington, Idaho Falls, Idaho, and Savannah River, South Carolina; and ensuring the safe storage of spent nuclear fuel at Hanford, Idaho, and Savannah River.

The Waste Isolation Pilot Plant will fully support shipments of contact-handled transuranic waste from the Idaho National Engineering and Environmental Laboratory, the Rocky Flats Environmental Technology Site, the Savannah River Site, and limited shipments from other sites.

Performance Measures

One way EM is ensuring success is to establish and manage based on sound performance measures. The EM program has been actively incorporating the requirements of the Government Performance and Results Act into its planning, budgeting, and management systems. At the programmatic level, these requirements are reflected in "corporate" performance measure and key milestone reporting and tracking. The EM management uses the corporate performance measures along with other site-specific and project-specific objectives on an annual basis to ensure that progress is being made toward EM's goal of site closure and project completion.

The chart below contains a summary of EM corporate performance measures for this program account. Detailed performance measure information can be found in the site details that follow this appropriation overview.

EM Corporate Performance Measures [a] [b]

	FY 2000 Actuals	FY 2001 Estimate	FY 2002 Estimate	Life-cycle
Defense Post 2006 Completion				
Number of Release Site Completions	132	147	28	6,976
Number of Facilities Decommissioned	40	9	1	1,953
Number of Facilities Deactivated	26	2	3	2,056
Number of High-Level Waste Canisters Produced	231	220	150	18,923
Volume of Transuranic Waste Received for Disposal at WIPP [c]	371	2,425	5,326	175,600
Volume of Transuranic Waste Shipped to WIPP for Disposal (m^3)	19	263	915	84,261
Volume of Mixed Low-Level Waste Treated (m^3)	4,732	4,279	2,220	57,731

[a] Life-cycle estimates for release sites, facilities, and high-level waste canisters include pre-1997 actuals. Waste type, nuclear materials, and spent nuclear fuel estimates are from fiscal years 1998 through 2070. In most instances, life-cycle refers to 1997-2070.

[b] This chart provides a consistent set of performance measures for the total EM program. The more detailed project-level justification provides a description of significant activities for each project including project-specific milestones, as applicable.

[c] Life-cycle estimate reflects the legal limit for the Waste Isolation Pilot Plant. The WIPP legal limit is provided as the life-cycle estimate since the expectation is that the full capacity at WIPP will be needed to dispose of EM's transuranic waste. PBSs have identified approximately 101,369 cubic meters of transuranic waste. Additional quantities of transuranic waste will result from EM's decontamination and decommissioning activities.

	FY 2000 Actuals	FY 2001 Estimate	FY 2002 Estimate	Life-cycle
Volume of Mixed Low-Level Waste Disposed (m^3)	3,582	3,307	2,902	87,734
Volume of Low-Level Waste Disposed (m^3)	41,553	40,862	75,702	1,871,836
Nuclear Material Stabilized - Pu Residue (kg bulk)	0	0	0	1
Spent Nuclear Fuel Moved to Dry Storage (MTHM)	2.658	78.975	0.270	353.147

Significant Accomplishments and Program Shifts

The Office of River Protection Waste Treatment and Immobilization Plant: This project will vitrify the high-level waste currently stored in underground storage tanks into a waste form suitable for permanent disposal off-site. This project was budgeted for under the Defense Environmental Management Privatization account through Fiscal Year 2000. Consistent with the FY 2001 appropriation, this project is budgeted for under the Defense Environmental Restoration and Waste Management appropriation, Post 2006 Completion account in the FY 2002 request. The Office of River Protection is requesting traditional budget authority to continue this project.

Funding Profile

(dollars in thousands)

	FY 2000 Comparable Appropriation	FY 2001 Original Appropriation	FY 2001 Adjustments	FY 2001 Comparable	FY 2002 Request
Post-2006 Completion	2,364,918	2,698,726	-280,679	2,418,047	2,107,733
Post 2006 Completion - ORP	440,412	757,839	-2,111	755,728	812,468
Total, Defense Post-2006 Completion	2,805,330	3,456,565	-282,790	3,173,775	2,920,201

Public Law Authorization:

Public Law 95-91, “Department of Energy Organization Act (1977)”

Public Law 102-579, “Waste Isolation Pilot Plant Land Withdrawal Act (1992)”

Public Law 103-62, “Government Performance and Results Act of 1993"

Public Law 106-377, “The Energy and Water Development Appropriations Act, 2001"

Public Law 106-398, “The National Defense Authorization Act for Fiscal Year 2001"

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Albuquerque Operations Office	89,909	89,553	75,707	-13,846	-15.5%
Carlsbad Field Office	178,975	190,886	164,570	-26,316	-13.8%
Idaho Operations Office	254,809	303,496	276,551	-26,945	-8.9%
Nevada Operations Office	85,396	87,203	82,843	-4,360	-5.0%
Oak Ridge Operations Office	265,046	277,357	244,102	-33,255	-12.0%
Oakland Operations Office	43,044	47,497	34,536	-12,961	-27.3%
Richland Operations Office	207,736	222,505	164,642	-57,863	-26.0%
Savannah River Operations Office	728,528	702,656	585,989	-116,667	-16.6%
Multi-Site	91,475	77,818	58,793	-19,025	-24.4%
Decontamination and Decommissioning Fund Deposit	420,000	419,076	420,000	924	0.2%
Subtotal, Defense Post 2006 Completion	2,364,918	2,418,047	2,107,733	-310,314	-12.8%
Office of River Protection	440,412	755,728	812,468	56,740	7.5%
Total, Defense Post-2006 Completion	2,805,330	3,173,775	2,920,201	-253,574	-8.0%

Albuquerque

Mission Supporting Goals and Objectives

Program Mission

Historically, the Albuquerque Operations Office's primary mission has been to manage sites that were involved in the research, development, production, and maintenance of nuclear weapons. The Los Alamos National Laboratory has an ongoing stockpile, stewardship, and research mission. The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Albuquerque Operations Office is to support cleanup of contaminated waste sites, and to provide for legacy waste management activities at the Los Alamos National Laboratory in New Mexico. In addition, the Albuquerque Nuclear Materials Stewardship Office helps provide complex-wide solutions to issues associated with stabilization and storage of plutonium and other nuclear materials. The Off-site Source Recovery Project is responsible for managing defense-related sealed radioactive sources. Finally, the New Mexico Agreement-in-Principle is funded out of this account.

Program Goal

The Albuquerque Operations Office's goal is to complete cleanup of the Los Alamos National Laboratory. Unforseen cost growth in other projects has caused a funding reprioritization to maintain earlier cleanup completion dates for the Sandia National Laboratories, which in turn, has caused the Los Alamos cleanup date to be extended. The Los Alamos National Laboratory manages programs which help reduce the potential for public exposure to nuclear materials through retrieval of excess plutonium-239 beryllium neutron sources and stabilization of at-risk excess nuclear materials. The Albuquerque Nuclear Materials Stewardship Office assists in the implementation of the Environmental Management Excess Materials Management Plan, which supports accelerated closure of Environmental Management sites and facilities. The goals of the Agreement-in-Principle are to provide states/tribes with opportunities to conduct oversight of the Environmental Management Programs, emergency response planning, and public information and outreach.

Program Objectives

The program objective for the Los Alamos National Laboratory is to have all contaminated sites remediated and all legacy waste disposed. In FY 2000, the Environmental Restoration program began a watershed approach, a strategy in which groups of release sites within a watershed are addressed, rather than evaluating each release site individually. This established a more systematic approach to characterization and remediation, and will help streamline the regulatory review process. Since 1999, treatment and disposal of all newly-generated mixed low-level waste and low-level waste at the Albuquerque sites is funded by Defense Programs. A key initiative at the Los Alamos National Laboratory in FY 1999 was to retrieve approximately 4,600 m^3 of transuranic waste from earth-covered storage pads and place it into inspectable storage configurations in accordance with a State of New Mexico compliance order. The FY 2002 budget also provides for continued transuranic waste retrieval and preparation activities at the Los Alamos National Laboratory in support of shipment and disposal at the Waste Isolation Pilot Plant.

The design development processes and improvements made in the Nuclear Material Facility Stabilization Research and Development Program will manage excess nuclear materials to help accelerate closure of sites and facilities, and the Off-Site Source Recovery Program will recover and consolidate the remaining backlog of plutonium-239 neutron sources. The Albuquerque Nuclear Material Stewardship Office will coordinate, consolidate, and integrate research and development and other activities to integrate the management of nuclear materials, including their packaging, shipping, and disposition.

In achieving our highest priority goals, we will seek to apply innovative science and technology solutions. The Albuquerque Operations Office has plans for the use of innovative technologies at several of its installations. For example, the Laser transuranic waste cutting technology will be used in the Decontamination and Volume Reduction System Facility to remotely reduce large transuranic contaminated waste at the Los Alamos National Laboratory. This technology was selected, because it was proven to be a safer technology choice over a manually operated system; for example, cutting shears and hand-operated saws.

Significant Accomplishments and Program Shifts

Los Alamos National Laboratory - Environmental Restoration

- Completed cleanup at two release sites (FY 2000).
- As part of the Cerro Grande fire recovery effort, stabilized about 90 sites touched by fire; conducted baseline sampling to characterize post-fire, pre-flooded conditions, and evaluated stabilized or removed sites or facilities subject to flooding (FY 2000).
- Completed assessment of White Rock land transfer parcel (FY 2000).
- Completed five new deep wells to characterize hydrogeology of the Los Alamos National Laboratory and extent of any contamination (FY 2000).
- Completed “hot” test demonstration of in-situ vitrification at TA-21 (FY 2000).

- LA/Pueblo Canyon Watershed activities planned: Remediate Technical Area 21 DP Tank Farm; Remediate Town Sites; and complete the Resource Conservation and Recovery Act Facility Investigation at Technical Area 0 (FY 2001).
- Mortandad Watershed activity planned: Characterize Technical Area 35 and Material Disposal Area C (FY 2001).
- Water Canyon Watershed activities planned: Characterize deep groundwater; Remediate Burning Ground; and Close out Material Disposal Area P (FY 2001).
- Parjarito Canyon Watershed activities planned: Drill one deep well; and complete Technical Area 54 Corrective Measure Study (FY 2001).
- Sandia Canyon Watershed activities planned: Characterize deep groundwater; and Remediate Industrial Site PCBs (FY 2001).
- Ancho Canyon Watershed activity planned: Characterize Material Disposal Area AB (FY 2001).
- Provide project management, technical support, and regulatory compliance (FY 2001).

Waste Management - Legacy Waste

- Retrieve legacy transuranic waste from Pad 4 under earth cover and place into compliant storage (FY 2000/FY 2001).
- Continue to prepare and certify transuranic waste for shipment to the Waste Isolation Pilot Plant (FY 2000/FY 2001).
- Treat and dispose of legacy mixed low-level waste according to the Site Treatment Plan (FY 2000/FY 2001).
- Sort, segregate, and repackage transuranic waste (FY 2000/FY 2001).
- Complete the Site Treatment Plan Annual Update Report (FY 2001).
- Continue mixed low-level waste operations and storage (FY 2001).
- Continue mixed low-level waste characterization and disposal (FY 2001).
- Continue to store, sort, segregate, and repackage transuranic waste (FY 2001).
- Continue the Transuranic Waste Inspectable Storage Project (FY 2001).
- Continue transuranic waste characterization (FY 2001).
- Complete the Site Treatment Plan Annual Update Report (FY 2002).
- Continue to store, sort, segregate, and repackage transuranic waste (FY 2002).
- Treat and dispose of 64 cubic meters of legacy waste (FY 2002).
- Complete 37 shipments of legacy transuranic debris waste to the Waste Isolation Pilot Plant (FY 2002).

Nuclear Material Facility Stabilization

- Continued the Research and Development program core technology component (FY 2000).
- Continued shelf-life studies and surveillance (FY 2000).
- Continue status reports on material and container surveillance experiments (FY 2001).
- Continue development/deployment of monitoring systems to assure safe long-term storage of excess nuclear materials (FY 2001).
- Evaluation/surveillance of shelf-life materials (FY 2001).
- Continue evaluation of container materials issues (gas generations, material compatibility) (FY 2001).
- Continue to develop technical basis for safe storage via core technical program (FY 2001).
- Provide technical basis for stabilization process qualification (FY 2001).

Albuquerque Nuclear Materials Stewardship Office

- Published a new plutonium storage standard to support stabilization and disposition activities (FY 2000).
- Developed and deployed neutron-based moisture probe for use in production packaging line for plutonium oxide in long-term storage containers at Rocky Flats and Hanford sites (FY 2000).
- Deployed supercritical fluid extraction for moisture measurements in production packaging line for plutonium oxide in long-term storage containers at Rocky Flats, Richland and/or Savannah River Sites (FY 2000).
- Conducted and analyzed surveillance activities on gram-scale and full-scale long-term storage containers and report results on a regular basis (FY 2000).
- Demonstrated and deployed electrolytical decontamination for glovebox decontamination, packaged material containers, and highly enriched uranium at the Rocky Flats and the Savannah River Sites (FY 2000).
- Developed and deployed real-time digital radiography to document changes inside a long-term storage container (FY 2000).
- Prepare a complex-wide transportation plan for nuclear materials undergoing stabilization. Coordinate material transportation issues complex-wide for nuclear material undergoing stabilization and disposition (FY 2000/FY 2001).
- Provide management of the Department's Nuclear Materials Stewardship Program to ensure successful interim storage and consolidation of nuclear materials in an efficient and safe manner (FY 2001).
- Consolidate excess nuclear materials to interim storage sites (materials from Rocky Flats, Fernald, and Mound will receive priority attention) (FY 2001).

- Continue planning and integration for the transfer of excess nuclear materials to disposition programs (FY 2001).
- A material management center will continue limited operation, providing disposition planning assistance to sites with sealed sources and isotopes no longer required for their programs (FY 2001).
- Nuclear Material Transportation and Packaging Committee will continue successful integration activities (FY 2001).
- Continue operation and maintenance of Cargo Restraint Transporters (FY 2001).

Off-Site Source Recovery Program - Defense

- Began consolidating the Waste Isolation Pilot Plant eligible sources, and estimated the Waste Isolation Pilot Plant eligible volumes (FY 2000).
- Developed characterization plan for Siemens MOX waste (FY 2000).
- Started transfer of government/military Pu-238, Pu-239, Radioisotope Thermoelectric Generators and neutron sources (FY 2000).
- Inventoried excess DOE neutron sources (FY 2000).
- Close out Rensselaer Polytechnic Institute activated sodium disposition; continue close-out of loan/lease agreements for excess Pu-239/Be (FY 2001).
- Develop a staging plan and transfer schedule for the Waste Isolation Pilot Plant eligible consolidated sealed sources with the Los Alamos National Laboratory/Environmental Management/Waste Management (FY 2001).
- Complete characterization and certification of Siemens MOX waste (FY 2001).
- Complete National Environmental Policy Act process for the U.S. Air Force Sr-90 Radioisotopic Thermoelectric Generators to establish a designated interim storage site (FY 2001).
- Continue close-out of legacy loan/lease agreements for excess radioactive material at institutions (FY 2001).
- Recover available excess neutron sources from the Naval Reactors program for consolidation and storage pending the Waste Isolation Pilot Plant transfer (FY 2001).
- Begin consolidation of excess DOE-owned neutron sources from across the complex (FY 2001).
- Accept ten Air Force Radioisotopic Thermoelectric Generators at designated storage site (FY 2002).
- Continue recovery of excess DOE/Naval Reactors sealed sources (FY 2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
AL004 / New Mexico Agreement in Principle (AIP)	2,237	1,080	725
AL008 / Nuclear Material Facility Stabilization R&D	10,276	9,629	9,817
AL009 / LANL Environmental Restoration	52,162	46,900	38,865
AL013 / LANL Waste Management - Legacy Waste	17,775	24,137	24,000
AL026 / Off-site Source Recovery Program - Defense	1,492	1,733	500
AL028 / Albuquerque Nuclear Material Stewardship Project Office	1,822	1,952	1,800
AL030 / Land Parcels Transfer at LANL	4,145	4,122	0
Total, Albuquerque	89,909	89,553	75,707

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Los Alamos National Laboratory	85,850	86,521	73,182	-13,339	-15.4%
Albuquerque Operations Office	4,059	3,032	2,525	-507	-16.7%
Total, Albuquerque	89,909	89,553	75,707	-13,846	-15.5%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	3	4	1
Facilities Decommissioning			
Cleanup	7	1	0
Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	118	100
Mixed Low-Level Waste			
Disposal (m^3)	89	59	0
Low-Level Waste			
Disposal (m^3)	159	403	600

Site Description

Los Alamos National Laboratory

The Los Alamos National Laboratory encompasses over 43 square miles in northern New Mexico and conducts major programs in multiple areas, including applied research in nuclear and conventional weapons development, nuclear fission and fusion, nuclear safeguards and security, and environmental and energy research. The waste produced includes low-level, mixed, hazardous, transuranic, sanitary waste streams, and small amounts of other waste from research. The primary waste management activities include storage, treatment, and disposal of transuranic and mixed low-level waste. All newly generated waste activities were transferred to the Office of Defense Programs in FY 1999. The Laboratory is comprised of approximately 2,000 release sites and about 100 surplus facilities within the currently defined scope. Because of its expertise with nuclear materials, the Los Alamos National Laboratory has been designated the lead laboratory for research and development efforts to support the Department's response to Defense Nuclear Facilities Safety Board Recommendation 94-1. In this capacity, the Los Alamos National Laboratory provides solutions to complex-wide technical and operational issues associated with stabilization and storage of plutonium and other nuclear materials.

Albuquerque Operations Office

The Department of Energy Albuquerque Operations Office manages, coordinates, tracks, and assists in the implementation of programs at the Los Alamos National Laboratory. Legal drivers at Albuquerque include the Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act; National Environmental Policy Act; State laws and codes; and DOE Orders.

Detailed Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

At the Los Alamos National Laboratory, a performance-based management program began in 1992 and renewed in 1997 with the negotiation of new contracts between the Los Alamos National Laboratory and DOE that incorporated the concepts of contractor performance against established expectations. The contract embodies the objectives of the Department's contract reform initiatives including incorporation of performance-based management provisions, more defined statements of work, enhanced performance objectives, increased accountability, and improved measures for safety and health of workers, the public, and the environment. This is a much more comprehensive and systematic approach than a typical award fee contract that focuses on a few areas of performance emphasis or improvement. The performance-based system measures against the expectations and rewards and penalizes, through monetary means, the contractor for its overall performance based on the results of the annual validation, evaluation, and rating.

The current contract with the Los Alamos National Laboratory for the management and operation of the lab will expire on September 30, 2002, and the DOE has extended the contract for three years, through September 30, 2005. The scope planned for FY 2002 has been reviewed and is appropriate to meet the goals of the site as outlined in the EM sites' baseline planning data. The funds requested for FY 2002 are appropriate based on a historical costs for similar work.

AL004 / New Mexico Agreement in Principle (AIP) **2,237** **1,080** **725**

The New Mexico Agreement-in-Principle provides partial funding through a grant for the support of New Mexico's oversight and monitoring of Department of Energy compliance with applicable environmental laws and regulations for the Los Alamos National Laboratory; Sandia National Laboratories, New Mexico; Lovelace Respiratory Research Institute; and the Waste Isolation Pilot Plant. The New Mexico Environment Department employees supporting Agreement-in-Principle activities are located on-site at the Department of Energy facilities in Los Alamos and Albuquerque and at the New Mexico Environment Department in Santa Fe.

- Continue to conduct activities related to the Oversight programs: environmental surveillance oversight; environmental restoration oversight; waste management oversight; emergency response planning and oversight; and public information and outreach.
- Oversight activities will be conducted at the Los Alamos National Laboratory, Sandia National Laboratory, New Mexico, the Waste Isolation Pilot Plant, and the Lovelace Respiratory Research Institute.
- Activities include collection and analysis of air, surface water, drinking water, soil, sediment, and groundwater samples; review and comment on technical plans and reports; attendance at technical project meetings; preparation of technical documents; and community outreach activities.
- Technical support/advice to the Los Alamos and Sandia Citizens Advisory Boards and to four of the Los Alamos Accord Pueblos.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

AL008 / Nuclear Material Facility Stabilization R&D 10,276 9,629 9,817

The Los Alamos National Laboratory is performing research and development activities as part of the Department's efforts to stabilize at-risk excess nuclear materials and to accelerate site closures. This program is being carried out primarily in response to the Defense Nuclear Facilities Safety Board Recommendation 94-1, and is the responsibility of the Office of Integration and Disposition. This recommendation focuses on accelerating the Department's efforts to reduce health and safety risks to workers, the public, and the environment. The Office of Integration and Disposition continues to direct the stabilization technology development activities under this project in coordination with the Albuquerque Nuclear Materials Stewardship Office.

- # Continue Shelf-Life Studies. These studies include processing and evaluating (pressure, corrosion resistance, etc) materials in 3013 containers. These materials are from all sites holding plutonium-bearing oxides, plutonium metals, and plutonium alloys in the K-Area Materials Storage facility.
- # Develop technical basis for storage of plutonium-bearing oxides, plutonium metals, and plutonium alloys in the K-Area Materials Storage facility.
- # Implement the Integrated Surveillance Plan and methodology for evaluation of long-term storage of plutonium-bearing oxides, plutonium metals, and plutonium alloys at the Rocky Flats Environmental Technology Site, Hanford, the Savannah River Site, and the Los Alamos National Laboratory.
- # Continue the development of the technical basis for safe storage via core science program.

Key Milestones

- # Complete development moisture sorption and desorption rates on pure and impure plutonium oxides (September 2001).
- # Complete Characterization of Savannah River Site materials (September 2001).
- # Complete characterization of <30 wt. percent plutonium materials (September 2002).

AL009 / LANL Environmental Restoration 52,162 46,900 38,865

This project protects human health and the environment from hazards posed by inactive and surplus DOE facilities and contaminated lands. The primary drivers for this project are the Laboratory's permit for corrective actions under the Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act, the land transfer legislation (Public Law 105-119) and concerned stakeholders. There are a large number of potential release sites, including sites on private, county, Federal, and DOE properties.

- # Planned activities include: remediation activities in several technical areas and continue limited groundwater investigations, and some deep well installations.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- < LA-Pueblo Watershed activities:
  - **S** Complete site cleanup in town site area.
  - **S** Conduct Resource Conservation and Recovery Act/Feasibility Investigation at Technical Area 0.
- < Mortandad Watershed activities:
  - **S** Continue characterization in Technical Area 35.
- < Water Canyon Watershed activities:
  - **S** Continue characterization of deep groundwater.
- < Parjarito Canyon Watershed activities:
  - **S** Drill an additional deep well for characterization of groundwater.
- < Sandia Canyon Watershed activities:
  - **S** Continue deep groundwater characterization.
  - **S** Complete remediation activities for industrial site PCBs.

Metrics			
Release Site			
Cleanups	2	4	1
Facilities Decommissioning			
Cleanups	7	0	0
Low-Level Waste			
Disposal (m^3)	159	395	0

Key Milestones

- # Technical Area - 54: MDA H-Submit Corrective Measures Study work plan to Administrative Authority (March 2001).
- # Technical Area - 0: Waste Water Treatment Plant Submit Voluntary Corrective Measure report to Administrative Authority (0-030(g)) (June 2001).
- # Technical Area-51, 54: Submit Voluntary Corrective Measure Report to Administrative Authority (August 2001).
- # Technical Area - 03: Submit Voluntary Corrective Measure report PRS 03-056 (c) (September 2001).

Complete two deep wells (September 2001).

Complete one deep well (September 2002).

AL013 / LANL Waste Management - Legacy Waste 17,775 24,137 24,000

This project provides for the treatment, storage, or disposal of all legacy waste, including mixed transuranic waste and mixed low-level waste generated at the Los Alamos National Laboratory. The waste was generated at 33 technical areas and is treated, stored, and disposed in compliance with applicable Federal and state requirements.

Continue mixed low-level waste operations and storage.

Continue mixed low-level waste characterization and disposal.

Continue to store, sort, segregate, and repackage transuranic waste.

Continue the Transuranic Waste Inspectable Storage Project.

Continue transuranic waste characterization.

Complete 37 shipments of legacy transuranic debris waste to the Waste Isolation Pilot Plant in FY 2002.

Metrics			
Transuranic			
Shipped to WIPP for Disposal (m^3)	0	117	100
Mixed Low-Level Waste			
Disposal (m^3)	89	59	0

Key Milestones

Update and submit the Site Treatment Plan to the New Mexico Environment Department (March 2001).

Retrieve 3,832 Transuranic Waste Inspectable Storage Project drums equivalents from Pad 2 (September 2001).

Process 60 m^3 of transuranic waste composed of large metal objects in Decontamination of Volume and Reduction project (September 2001).

Complete 14 shipments of legacy transuranic debris waste to the Waste Isolation Pilot Plant (September 2001).

Vent 3,832 Tank Waste Inspectable Storage Project drums (September 2001).

Treat and dispose 59 m^3 of legacy mixed low-level waste (September 2001).

Vent 3,832 Tank Waste Inspectable Storage Project drums (September 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Retrieve 3,832 Tank Waste Inspectable Storage Project drums equivalents from Pad 2 (September 2002).
- # Process 360 m^3 of transuranic waste composed of large metal objects in Decontamination and Volume Reduction System project (September 2002).
- # Complete 37 shipments of legacy transuranic debris waste to the Waste Isolation Pilot Plant (September 2002).
- # Treat and dispose of 30 m^3 of legacy mixed low-level waste (September 2002).

AL026 / Off-site Source Recovery Program - Defense 1,492 1,733 500

The Los Alamos National Laboratory conducts programs for the management of nuclear materials, including the Off-Site Source Recovery Program. This program reduces the potential for public exposure to nuclear materials through the retrieval of excess plutonium neutron sources and other excess materials.

- # Establish the charge back program to support source acceptance from within the DOE complex.
- # Accept Air Force Radioisotipic Thermoelectric Generators at designated storage site.
- # Continue recovery of excess DOE/Naval Reactors sealed sources.

Metrics			
Low-Level Waste			
Disposal (m^3)	0	8	0
Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	1	0

Key Milestones

- # Complete Waste Characterization and Certification (April 2001).
- # Establish the Waste Isolation Pilot Plant shipping schedule (September 2001).

AL028 / Albuquerque Nuclear Material Stewardship Project Office 1,822 1,952 1,800

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Albuquerque Nuclear Materials Stewardship Office provides field management of the Nuclear Materials Stewardship Program to ensure successful interim storage and consolidation of nuclear materials in a safe and efficient manner; implements nuclear materials technology, standards and data management; serves as the principal integrator for planning, packaging, transportation, interim storage and surveillance systems; expedites removal of nuclear materials from facilities and sites to reduce mortgages, facilitate achievement of Accelerating Cleanup goals, and to minimize the need for new storage facilities; and ensures the availability of appropriate facilities and capabilities to provide interim storage of excess nuclear materials in a safe, secure, and accountable manner.

- # Provide field management of the Department's Nuclear Materials Stewardship Program to ensure successful interim storage and consolidation of nuclear materials in a safe and efficient manner.
- # Expedite consolidation of excess nuclear materials to interim storage site (Rocky Flats, Mound, and Fernald will receive priority attention).
- # Continue planning and integration for the transfer of excess nuclear materials to disposition programs.
- # Continue operating a material management center to assist sites with sealed sources and isotopes no longer required for their programs.
- # Continue successful Nuclear Material Transportation and Packaging Committee integration activities.

Key Milestones
Expand Non-Actinide Isotopes and Sealed Sources Materials Group Support (September 2001)
FY 2003 Packaging and Transportation Schedule (September 2002)

AL030 / Land Parcels Transfer at LANL 4,145 4,122 0

This project is required to meet legislative mandates of Public Law 105-119, which requires the Department of Energy to transfer land not required for national security purposes and which has been cleaned up back to the County of Los Alamos and the San Ildefenso Pueblo. Ten parcels totaling approximately 4,000 acres have been identified for transfer. The process, schedule, and costs for the land transfers are described in the Conveyance and Transfer Plans submitted to Congress in December 2000.

- # Work will be deferred to higher priority activities.

Metrics			
Release Site			
Cleanups	1	0	0
Facilities Decommissioning			

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
Cleanup	0	1	0
Key Milestones			
# Issue Final White Rock Parcel Comprehensive Environmental Response, Compensation, and Liability Act 120 (H) Report (January 2001).			
Total, Albuquerque	**89,909**	**89,553**	**75,707**

Explanation of Funding Changes From FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
AL004 / New Mexico Agreement in Principle (AIP)	
# Decrease in funding reflects support transferred to higher priorities.	-355
AL008 / Nuclear Material Facility Stabilization Research and Development	
# Increase in funding reflects the need to ramp up the shelf life studies and the long-term storage to their full scope.	188
AL009 / LANL Environmental Restoration	
# Decrease in funding reflects site-wide reprioritization to continue cleanup work at the Sandia, New Mexico and other Albuquerque Complex sites of higher priority.	-8,035
AL013 / LANL Waste Management - Legacy Waste	
# Decrease in funding reflects support transferred to higher priorities.	-137
AL026 / Off-Site Source Recovery Program - Defense	
# Decrease in funding reflects slightly reduced scope of work, and supports funds transferred to higher priorities.	-1,233
AL028 / Albuquerque Nuclear Material Stewardship Project Office	
# Decrease in funding reflects support transferred to higher priorities.	-152
AL030 / Land Parcels Transfer at LANL	
# Decrease in funding reflects support transferred to higher priorities.	-4,122
Total Funding Change, Albuquerque	-13,846

Carlsbad

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense, Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Carlsbad Field Office, is to protect human health and the environment by operating the Waste Isolation Pilot Plant for safe disposal of transuranic waste and by maintaining an effective system for the transportation of transuranic waste. The disposal facility is located in southeastern New Mexico near Carlsbad, 2,150 feet (655 meters) underground in bedded salt. Transuranic waste is a by-product of the nation's nuclear weapons research, development, production, and decommissioning activities. Congress authorized the Waste Isolation Pilot Plant in 1979 (Public Law 96-164) as a research project to prove the feasibility of deep geological disposal for transuranic waste to protect human health and the environment. In October 1992, Congress passed the Waste Isolation Pilot Plant Land Withdrawal Act (Public Law 102-579), which permanently transferred public lands to the Department of Energy, established the Environmental Protection Agency as the facility regulator, and authorized the Department to annually provide $20,000,000 (with inflation adjustments) for 14 years starting in FY 1998, to the State of New Mexico for economic assistance. Hazardous waste compliance with the Resource Conservation and Recovery Act is regulated by the New Mexico Environment Department. The State permit was issued in October 1999 with an effective date of November 1999. Additionally, the FY 2001 appropriations conference report language provided direction to support two new programs, one with the United States - Mexico Border Health Commission to demonstrate technologies to reduce hazardous waste streams and to support the Materials Corridor Partnership Initiative, and the other to support a transparency project at the Waste Isolation Pilot Plant.

Program Goal

The primary goal of the program is to permanently dispose transuranic waste at the Waste Isolation Pilot Plant in a safe and environmentally compliant manner. In addition, the Carlsbad Field Office is responsible for the transportation program, including the transportation packagings and trailers, for shipping transuranic waste from the DOE waste generation sites to the Waste Isolation Pilot Plant. Many of the Federal Facility Compliance Act consent orders and agreements between the States, agencies, and the Department depend on disposal of transuranic waste at the Waste Isolation Pilot Plant. The startup goal was achieved on March 26, 1999, when the first shipment of non-mixed (radioactive waste that does not contain toxic waste as regulated by the Resource Conservation and Recovery Act) transuranic waste from the Los Alamos National Laboratory was received at the site for disposal. Waste receipt to date has been contact-handled. Activities related to receipt of remote-handled transuranic waste are planned in FY 2002. During the planned 35-year disposal phase, waste will be received from 6 major and up to 21 small quantity sites. Current planning has all

transuranic waste at the Rocky Flats Environmental Technology Site disposed by FY 2006. The disposal phase is followed by a five-year decommissioning and dismantlement phase.

The Carlsbad Field Office awarded a new management and operating contract for site operations in December 2000. The new contract for the Waste Isolation Pilot Plant facility is a five-year performance-based, cost-plus award-fee contract that includes both award fee and performance based incentives to insure that maximum performance is obtained. The contractor is responsible for the protection of the employees, the public, and the environment at the Waste Isolation Pilot Plant and is responsible to pursue efficiencies in waste transportation and disposal. The contractor is also responsible for site specific and intra-site integration of transuranic waste activities leading to the integration of waste management and environmental activities. These activities include efficiencies in the Waste Isolation Pilot Plant disposal operations, infrastructure, the management of the National Transuranic Waste program, transportation management, as well as the pursuit of permit modifications that will result in complex-wide operational efficiencies. The Department believes that this new approach to contracting philosophies will lead to a more efficient and cost effective transuranic waste program both at the Waste Isolation Pilot Plant as well as throughout the DOE complex.

The planned end state for the Waste Isolation Pilot Plant is to have all qualified Department of Energy transuranic waste disposed and to decommission and dismantle all surface facilities at the Waste Isolation Pilot Plant site. Total life-cycle costs are estimated to be $13,000,000,000 in dollars. The key risk reduction factor that is addressed by the Waste Isolation Pilot Plant is the elimination of potential hazards to the public, workers, and environment by permanently disposing transuranic waste in a deep underground repository.

Program Objectives

During FY 2002 the Waste Isolation Pilot Plant will support contact-handled transuranic waste shipments from the Rocky Flats Environmental Technology Site, the Savannah River Site, the Argonne National Laboratory - East, the Idaho National Engineering and Environmental Laboratory, and limited shipments from other sites including the Nevada Test Site and the Los Alamos National Laboratory. Receipt of contact-handled and transuranic waste from Mound and the Savannah River Site is also supported. The Waste Isolation Pilot Plant will meet transuranic waste disposal goals by maintaining a receipt rate of 14 contact-handled transuranic waste shipments from Mound and Savannah River per week during FY 2002. To meet these objectives will require significant increases in efficiencies and reprioritization of certain activities. The Department of Energy plans to pursue a combination of efficiencies in the Waste Isolation Pilot Plant operations and reductions in certain programs, including the following: 1) working with the Environmental Protection Agency, Nuclear Regulatory Commission, and the New Mexico Environment Department to develop a strategy that will reduce transuranic waste characterization and shipping costs; 2) scaled back support to Advisory groups and state organizations; and 3) eliminating the Southwest Boarder and transparency initiatives.

The Carlsbad Field Office vision is to serve as the model for public management of transuranic waste and to be perceived by stakeholders as setting new standards of excellence. The Carlsbad Field Office also funds a wide variety of institutional programs that provide economic impact assistance and operational oversight. Institutional support provides funding for other activities such as the Carlsbad Environmental Monitoring and

Research Center, Western Governors' Association, the transportation corridor states, cooperative agreements with Indian Tribes, New Mexico Emergency Response, New Mexico economic assistance, and other activities.

An integrated schedule and baseline linking all the generator site activities with Carlsbad activities allows for planning and optimization of shipping and disposal. In achieving our highest-priority goals, the Carlsbad Field Office will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, less expensively, and faster. For instance, the Carlsbad Field Office is seeking approval for a permit modification that will allow transuranic waste generator/storage sites to use digital radiography to non-destructively examine drums of waste that are destined for the Waste Isolation Pilot Plant. The Office of Science and Technology sponsored Waste Inspection Tomography provides real time analysis at an estimated savings of tens of millions of dollars for the 35-year life of the Waste Isolation Pilot Plant.

Significant Accomplishments and Program Shifts

- The first shipments of transuranic waste to the Waste Isolation Pilot Plant in accordance with the Resource Conservation and Recovery Act permit requirements came from the Rocky Flats Environmental Technology Site in March 2000 and from the Idaho National Engineering and Environmental Laboratory in July 2000 (FY 2000/CBFO-1/CBFO-3).
- The first shipment of transuranic waste from the Hanford Site was received in July 2000 (FY 2000/CBFO-1/CBFO-3).
- The Waste Isolation Pilot Plant Resource Conservation and Recovery Act Part B final permit was received from the State of New Mexico on October 27, 1999, with an effective date of November 26, 1999 (FY 2000/CBFO-2).
- Awarded Contact-Handled and Remote-Handled Transuranic Waste carrier contract in August 2000 (FY 2000/CBFO-3).
- Awarded Remote-Handled Transuranic Waste shipping containers privatization contracts for 12 casks in August 2000 (FY 2000/CBFO-6).
- Received waste from the transuranic waste generator sites at the rate of three shipments per week at the end of FY 2000, increases to approximately 9 shipments per week by the end of FY 2001, and maintains an estimated average level of 14 shipments per week during FY 2002 (FY 2000/FY 2001/FY 2002/CBFO-1/CBFO-3).
- Provide annual payments to the State of New Mexico for economic assistance as specified in the Waste Isolation Pilot Plant Land Withdrawal Amendment Act (FY 2000/FY 2001/FY 2002/CBFO-8).
- Awarded contract for the Waste Isolation Pilot Plant Site Management and Operating Contractor in December 2000 (FY 2001/CBFO-1).

- Awarded contract for 12 contact-handled waste shipping containers on October 26, 1999 (FY 2000). Awarded options for 12 additional TRUPACTs in June and September 2000. Awarded options for 6 additional TRUPACTs in January 2001 (FY 2001/CBFO-3).
- Provide the infrastructure for transportation services for transuranic waste shipments from two new sites, for the Savannah River Site and the Argonne National Laboratory - East routes (FY 2001/FY 2002/CBFO-3).
- Continue receipt of contact-handled transuranic waste from the Rocky Flats Environmental Technology Site, the Idaho Engineering and Environmental Laboratory, the Los Alamos National Laboratory, and Hanford. Received the first shipment of contact-handled waste from the Los Alamos National Laboratory in accordance with the Resource Conservation and Recovery Act permit in April 2001 (FY 2001/CBFO-1/CBFO-3).
- Receive the first shipment of contact-handled transuranic waste from the Savannah River Site in June 2001. Also, through the use of mobile vendors, increase the throughput of the Savannah River Site waste shipments to the Waste Isolation Pilot Plant to allow receipt of Mound transuranic waste into the Savannah River Site to support Mound site closure (FY 2001/FY 2002/CBFO-1/CBFO-3/CBFO-4).
- Receive the first shipment of contact-handled transuranic waste from the Argonne National Laboratory - East in October 2001 through use of a second mobile vendor (FY 2002/CBFO-1/CBFO-3/CBFO-4).
- Continue activities necessary for the receipt of remote-handled transuranic waste which include modification to underground and surface facilities, safety and health, preparation of Final Safety Analysis Report, and an Operational Readiness Review, all necessary permit modifications and other regulatory approvals, as well as operations (FY 2002/CBFO-1/CBFO-2).

Program Shifts

- The Department of Energy is evaluating options to facilitate shipments of transuranic waste from the small quantity sites. A revised Record of Decision to perform transuranic waste characterization activities at the Waste Isolation Pilot Plant site was issued in December 2000. Permit modifications will be submitted to the New Mexico Environment Department by September 2001 (FY 2001/FY 2002/CBFO-2/CBFO-4).
- Mobile vendors will be deployed at both the Savannah River Site and the Argonne National Laboratory - East to support characterization of transuranic waste and accelerated shipments off those sites (FY 2001/FY 2002/CBFO-4).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
CBFO-1 / WIPP Base Operations	84,815	87,080	88,034
CBFO-2 / WIPP Disposal Phase Certification and Experimental Program	33,675	19,586	15,000

CBFO-3 / WIPP Transportation	19,979	28,897	20,000
CBFO-4 / WIPP TRU Waste Sites Integration and Preparation	19,606	31,523	20,000
CBFO-7 / U.S. Mexico Border/Materials Partnership Initiative	0	3,000	0
CBFO-8 / Economic Assistance to State of New Mexico	20,900	20,800	21,536
Total, Carlsbad	178,975	190,886	164,570

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Waste Isolation Pilot Plant	178,975	190,886	164,570	-26,316	-13.8%
Total, Carlsbad	178,975	190,886	164,570	-26,316	-13.8%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Transuranic Waste			
Received for Disposal at WIPP (m^3)	371	2,425	5,326

Site Description

Waste Isolation Pilot Plant

The Waste Isolation Pilot Plant facility is comprised of surface support buildings, a waste-handling building, four shafts, and the mined underground operations area. The facility is designed for deep geological disposal of defense-generated transuranic waste resulting from nuclear weapons production, dismantlement, and site cleanup. The repository is located in southeastern New Mexico near Carlsbad, 2,150 feet (655 meters) underground in bedded salt. The bedded salt where transuranic waste will be disposed has been stable for over 225 million years, and, through extensive computer modeling and experiments, the Department of Energy has successfully demonstrated to the Environmental Protection Agency that the salt will remain stable for at least the next 10,000 years. On March 26, 1999, the Waste Isolation Pilot Plant received its first shipment of non-mixed contact-handled transuranic waste from the Los Alamos National Laboratory. The Department of Energy received the final Resource Conservation and Recovery Act Part B Permit from the State of New Mexico on October 27, 1999, with an effective date of November 26, 1999.

Detailed Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The managing and operating contractor accounts for approximately 50 percent of the Carlsbad Field Office funding requirements. The remaining funding contracting vehicles are dependent upon existing contracting mechanisms, such as national laboratories, grants, and agreements in principle. The scope planned for FY 2002 is appropriate to meet the goals of closure of Rocky Flats, Mound, and Oak Ridge's Remote-Handled Transuranic Waste program. The scope allows for limited continuation of the mobile and centralized characterization concept. There are no construction projects funded in FY 2002.

CBFO-1 / WIPP Base Operations 84,815 87,080 88,034

This project provides for all activities required to maintain waste receipt and disposal operations including: mining, waste handling, surface and underground facility operations; compliance with State and Federal laws related to safety and health and operational permits; and administrative infrastructure.

- # Maintain contact-handled transuranic waste receipt capability sufficient to dispose of transuranic waste from the Rocky Flats Environmental Technology Site, the Savannah River Site, the Argonne National Laboratory - East, the Idaho Engineering and Environmental Laboratory, and limited shipments from other sites.
- # Maintain the Waste Isolation Pilot Plant site in compliance with non-waste related DOE Orders, Federal, State, and local requirements.
- # Continue the Waste Isolation Pilot Plant site activities necessary to comply with certification and permitting requirements.
- # Complete facility modification and receive regulatory approvals to initiate the receipt of remote-handled transuranic waste.

Metrics			
Transuranic Waste			
Received for Disposal at WIPP (m^3)	371	2,425	5,326

Key Milestones

- # Complete Remote-Handled Equipment Modifications (April 2001).
- # Submit remote-handled compliance program to regulators (May 2001).
- # Remote-Handled permit to New Mexico Environment Department (August 2001).
- # Begin Mining Panel 3 (December 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

CFBO-2 / WIPP Disposal Phase Certification and Experimental Program 33,675 19,586 15,000

This project includes experimental and performance assessment work in support of the five-year Environmental Protection Agency recertification cycle and operational performance improvements for the Waste Isolation Pilot Plant site and the national transuranic waste system.

- # Complete system verification and sensitivity analysis to support the Environmental Protection Agency five-year facility recertification requirement.
- # Provide continuing experimental support necessary to meet recertification requirements for performance assessment.

Key Milestones

- # Submit permit modifications for waste characterization at the Waste Isolation Pilot Program to regulators (April 2001).
- # Submit permit modification for Digital Radiography and Computed Tomography to regulators (June 2001).
- # Submit permit modifications for data management to regulators (October 2001).

CFBO-3 / WIPP Transportation 19,979 28,897 20,000

This project includes all activities related to transportation, such as emergency response training, establishing and opening transportation corridors; contact-handled and remote-handled packaging initiatives; carrier services for transporting waste to the Waste Isolation Pilot Plant; and stakeholder interfaces with the Western Governors' Association, transportation corridor states, and Native American Tribes. Currently the transportation corridors from the Los Alamos National Laboratory, the Idaho National Engineering and Environmental Laboratory, the Rocky Flats Environmental Technology Site, the Savannah River Site, and Hanford are open. The Argonne National Laboratory - East shipping corridor is planned to be opened in September 2001. The lead time for opening additional corridors is approximately two years.

In October 1999, the Department awarded contracts to acquire 12 TRUPACT-IIs from two contractors (6 to be provided by each) with options for additional TRUPACT-IIs. Options for additional TRUPACTs were awarded in June 2000, September 2000, and January 2001.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Department of Energy also awarded two fixed-price contracts for carrier services in August 2000, each for a five-year period. The carrier service contracts included transportation services for contact-handled and remote-handled transuranic waste from DOE sites to the Waste Isolation Pilot Plant, trailer fabrication and maintenance, and participation in emergency exercises and public awareness events. The fixed-price approach was selected for these contracts because detailed requirements could be specified, there was adequate price competition, and the risk was judged to be acceptable. This approach is expected to be significantly more cost effective than alternative contracting approaches.

- # Provide the infrastructure, shipping containers, and transportation services to support contact-handled transuranic waste shipments from the Rocky Flats Environmental Technology Site, the Idaho National Engineering and Environmental Laboratory, the Savannah River Site, the Argonne National Laboratory - East, and limited shipments from other sites at the combined rate of 14 shipments per week.
- # Provide hospital and emergency response training under cooperative agreements with the affected states and tribes to open or maintain the state transportation corridors to support the shipping routes.
- # Provide support for the development of a remote-handled transportation system.

Key Milestones

- # First Savannah River Site contact-handled shipment to the Waste Isolation Pilot Plant (June 2001).
- # Open the Nevada Test Site corridor (September 2001).
- # First Argonne National Laboratory - East shipment to the Waste Isolation Pilot Plant (October 2001).

CBFO-4 / WIPP Transuranic Waste Sites Integration and Preparation 19,606 31,523 20,000

This project includes program integration and infrastructure activities, required to prepare the Department of Energy transuranic waste complex for waste shipments to the Waste Isolation Pilot Plant, including all auditing activities performed by the Carlsbad Field Office. This project also includes the Department's commitments to outside stakeholders such as: the Carlsbad Environmental Monitoring and Research Center, as well as oversight commitments to the National Academy of Sciences. Also, included are infrastructure support costs such as those in the Interagency Agreement with the Bureau of Land Management.

- # Complete annual transuranic waste site recertifications of the Rocky Flats Environmental Technology Site, the Savannah River Site, and the Argonne National Laboratory - East.
- # Support for oversight and economic impact to the local community, such as funding for the Carlsbad Environmental Monitoring and Research Center and the National Academy of Sciences.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Provide integration and infrastructure to prepare sites for the shipment of remote-handled waste to the Waste Isolation Pilot Plant.

Deploy mobile vendors to provide waste characterization support to the Savannah River Site and the Argonne National Laboratories - East. Mobile vendor support at the Savannah River Site enables Mound to ship waste to the Savannah River Site to support Mound closure.

Key Milestones

Certify mobile vendor at the Savannah River Site (July 2001).

Complete the Waste Isolation Pilot Plant Waste Information System modifications for remote-handled waste (August 2001).

Certify mobile vendor at the Argonne National Laboratory - East (October 2001).

CBFO-7 / U.S. Mexico Border/Materials Partnership Initiative **0** **3,000** **0**

This project provides for activities to support the U.S. Mexico Border Health Commission/Materials Corridor Partnership Initiative to identify and deploy mature innovative technological solutions to waste and energy problems that threaten public health and environmental security, and help improve socio-economic conditions.

No activity.

CBFO-8 / Economic Assistance to State of New Mexico 20,900 20,800 21,536

Public Law 102-579, as amended by Public Law 104-201, authorizes funds to be appropriated for payments to the State of New Mexico in the amount of $20,000,000, adjusted for inflation based on the Consumer Price Index, for each of the 14 fiscal years beginning with the fiscal year 1998. The FY 2002 amount for economic assistance will be $21,536,0000.

Provide payment to the Sate of New Mexico for economic assistance as specified in the Waste Isolation Pilot Plant Land Withdrawal Act.

Total, Carlsbad Field Office 178,975 190,886 164,570

Explanation of Funding Changes From FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
CBFO-1 / WIPP Base Operations	
# Increase in funding reflects increased general plant project funding for constructing the Site Laboratory Complex.	954
CBFO-2 / WIPP Disposal Phase Certification and Experimental Program	
# Decrease in funding reflects reduced scope of effort in FY 2002.	-4,586
CBFO-3 / WIPP Transportation	
# Decrease in funding reflects projected cost efficiencies.	-8,897
CBFO-4 / WIPP Transuranic Waste Sites Integration and Preparation	
# Decrease in funding reflects projected cost efficiencies.	-11,523
CBFO-7 / U.S. - Mexico Border/Materials Partnership Initiative	
# Decrease in funding reflects reallocation to higher priority activities.	-3,000
CBFO-8 / Economic Assistance to the State of New Mexico	
# Increase in funding reflects adjustment for inflation based on the Consumer Price Index.	736
Total Funding Change, Carlsbad	-26,316

Idaho

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Idaho National Engineering and Environmental Laboratory is to safely manage and dispose of high-level radioactive waste, transuranic waste, and spent nuclear fuel, while maintaining the necessary infrastructure to meet the compliance challenges associated with applicable environmental requirements and agreements, particularly the Idaho Settlement Agreement, and completion of the environmental restoration activities under the Federal Facility Agreement and Consent Order.

Program Goal

The Environmental Management work is projected to continue at the Idaho National Engineering and Environmental Laboratory through 2070. The primary goal of the Post 2006 Completion Account is to meet the Idaho Settlement Agreement, which includes: treatment, storage, and disposal operations for transuranic waste, high-level waste, and mixed waste; dry storage and transfer of spent nuclear fuel; closure of remaining Comprehensive Environmental Response, Compensation, and Liability Act remediation sites; and surveillance and maintenance of contaminated facilities until deactivation, decontamination and decommissioning, or facility disposition can be accomplished and long-term stewardship requirements met. Necessary infrastructure upgrades will be performed to support these ongoing activities. The Idaho Settlement Agreement requires spent nuclear fuel to be packaged for transfer and removed from Idaho by January 1, 2035. Idaho is the "lead laboratory" for integrating DOE-owned spent nuclear fuel activities and is the interface with the DOE Office of Civilian Radioactive Waste Management. A key goal of this program is to assure that all DOE owned fuel will be acceptable for disposal in a geologic repository.

Program Objectives

The objective of this program is to complete all remediation efforts for the site under the Federal Facility Agreement and Consent Order. The program also will provide for interim storage and management of spent nuclear fuel produced by the Idaho National Engineering and Environmental Laboratory reactors, navy fuels, foreign and domestic research reactors, and other DOE site reactors, and in addition, manage small quantities of commercial spent nuclear fuel, including fuel at Ft. St. Vrain in Colorado. The objective is also to provide for safe storage, pretreatment, and disposal of high-level waste, low-level waste, mixed low-level waste, and mixed transuranic waste at the Idaho Nuclear Engineering and Environmental Laboratory. Legacy high-level waste has been pretreated and converted to a calcine, with sodium-bearing liquid waste remaining in the tank farm from decontamination, 2nd and 3rd cycle reprocessing, and waste treatment activities. The high-level waste project continued calcining approximately 80,000 gallons of liquid waste through the first half of FY 2000, and then placed the calciner in standby on May 31, 2000, pending an Environmental Impact Statement decision on upgrading it to meet regulatory requirements or the selection of an alternative technology. The high-level waste project objective provides for continued management through safe storage, liquid evaporation, and continued decontamination activities (debris treatment and filter leaching).

In addition, the following objectives are governed by or support the Settlement Agreement (October 17, 1995) with the State of Idaho:

- The high-level waste activities will treat sodium-bearing waste by December 2012.
- The Department of Energy will cease use of the 11 high-level waste tanks by 2012. Under a Consent Order modification signed in FY 1998, the Department of Energy will cease use of the five pillar and panel tanks by June 2003.
- Submitted a Resource Conservation and Recovery Act closure plan to the State of Idaho for at least one tank in December 2000.
- By a target date of December 2035, all high-level waste at the Idaho National Engineering and Environmental Laboratory will be treated and road ready for shipment out of Idaho.
- Decision on future calciner operations by July 2001.
- The transfer of the Three Mile Island spent fuel from wet to dry storage facilities will be completed by June 1, 2001.
- The transfer of all spent fuel from wet storage facilities to dry interim storage will be completed by December 31, 2023.
- All spent fuel will be removed from Idaho by January 1, 2035.

The December 1996 award of the Advanced Mixed Waste Treatment Project contract will enable the Idaho National Engineering and Environmental Laboratory to meet the Idaho Settlement Agreement; completing construction of the Advanced Mixed Waste Treatment Project by December 31, 2002; commencing operations by March 31, 2003; begin shipping a running average of at least 2,000 m^3 of transuranic waste out of the State of Idaho each year after January 1, 2003; and completing the shipment of 65,000 m^3 of transuranic waste to the Waste Isolation Pilot Plant, or another such facility designated by DOE, by a target date of December 31, 2015, but no later than December 31, 2018.

By FY 2006 the Idaho National Engineering and Environmental Laboratory plans to accomplish the following objectives:

Over 25 percent of the Department of Energy's spent nuclear fuel in fuel handling units as counted in FY 1998 will be transferred to dry interim storage.

Approximately 19,500 m^3 of stored transuranic and alpha low-level mixed waste will be treated by the Advanced Mixed Waste Treatment Project and shipped to the Waste Isolation Pilot Plant or another appropriate facility for disposal.

Newly generated mixed waste will be treated at other Department of Energy facilities or at commercial treatment facilities.

Will complete 100 percent of environmental restoration assessments and 90 percent of release sites.

Two high-level liquid waste tanks will be closed.

An objective of the Environmental Management Program at the Idaho National Engineering and Environmental Laboratory is to develop, demonstrate, and deploy technologies to assist site cleanup, accelerate schedule, and lower cost. Over forty technologies have been deployed since 1998 to support major site programs on environmental restoration of soil and groundwater, decontamination and decommissioning of facilities, and waste management including high-level, transuranic, and mixed low-level waste. Another major objective is to improve the science base for technologies, especially in areas of soil and groundwater remediation and long-term stewardship, to enable more effective cleanup to be achieved in the future than is possible today. Science and technology efforts are being aligned according to the performance and schedule needs of the operational programs. Examples of these efforts are:

Characterization in the Radioactive Waste Management Complex to verify buried waste inventory and to support planning of hot spot remediation using rapid scanning techniques, such as those based on eletromagnetic sensing (FY 2000).

Continued use of decontamination and decommissioning technologies on characterization, equipment and facility dismantlement, and waste disposal deployed earlier and now baselined at the Idaho National Engineering and Environmental Laboratory (FY 2000).

Emplaced of probe-tubes using resonant sonic drilling at Pit 9 to facilitate subsequent accurate moisture and organic nuclear logging and location of hot spots (FY 2000).

- Emplacement of probe-tubes (including those of advanced design) in Pits 4 and 10 to support data collection for preparation of the Waste Area Group-7 Remedial Investigation/Feasibility Study report (FY 2001).
- Detailed testing and evaluation of vitrification process to minimize uncertainties of planned vitrification of sodium bearing waste (FY 2001).
- Develop technologies to retrieve and stabilize High-Level Waste Tank heels and to immobilize any residual waste in the High-Level Waste Tank Farm to assist meeting site agreements to remove high-level waste from above Snake River Plain Aquifer (FY 2002).
- Evaluate long-lived in-situ sensor options to support future verification that residual in-ground contaminants remain immobilized in long-term stewardship (FY 2002).
- Continue to deploy innovative technologies in decontamination and decommissioning of spent nuclear fuel storage basins and ancillary facilities as scheduled by the Idaho National Engineering and Environmental Laboratory Comprehensive Facility and Land Use Plan (FY 2002).

Significant Accomplishments and Program Shifts

- Continue remedial actions and issue Remedial Actions Report at Operable Unit 2-13 (FY 2000). Perform Interim Actions on five new sites (FY 2001/ID-ER-102).
- Completed final Remedial Design/Remedial Action Work Plans and began post Record of Decision field work at Operable Unit 3-13 for Remedial Action Groups 1 (Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility), 4 (Perched Water), and 5 (Buried Gas Cylinders), and completed final 1020 design for the staging, storage, stabilization, and Treatment Facility (FY 2000/ID-ER-103).
- Complete Phase I construction wells and begin monitoring perched water and Snake River Plain Aquifer, continue construction of the replacement Percolation Ponds; complete Title I (30 percent design) for the Comprehensive Environmental Response, Compensation, and Liability Act waste disposal facility and initiate excavation of the disposal cell and complete Title I and Title II (30 percent and 90 percent designs) for the new waste disposal support facility the Staging, Storage, Stabilization, and Treatment Facility; complete construction of Tank Farm Interim Actions (storm-water drainage diversion and Tank Farm Spray-on-Cover); and continue work on final Operable Unit 3-14 (Tank Farm Remedial Investigation/Feasibility Study) Work Plan (FY 2001/ID-ER-103).
- Continued the Vacuum Vapor Extraction Remedial Action and groundwater and Pad A monitoring and completed remedial investigation probing, analysis and evaluation of Pits 4 and 10 and expanded probing of Pit 9 (FY 2000/ID-ER-107, formerly ID-ER-106).
- Completed 90 percent design for stage 2 of the limited retrieval/excavation in selected areas of Pit 9 (FY 2000/ID-ER-107, formerly ID-ER-106).

- Monitor Pad A cap and complete the Comprehensive Environmental Response, Compensation, and Liability Act five-year review; insert and log probe holes to obtain data to support preparation of Remedial Investigation/Feasibility Study; complete in-situ vitrification treatability testing; complete field-scale tests and develop reports for in-situ grouting studies; and issue final report for ex-situ soil treatability study for Operable Unit 7-13/14 (FY 2001/ID-ER-107).
- Complete Phase II Remedial Action Report; complete development of Phase III operations strategy; continue Vapor Vacuum Extraction and treatment operations; continue vadose zone monitoring and complete the Comprehensive Environmental Response, Compensation, and Liability Act five-year review for Operable Unit 7-08 (FY 2001/ID-ER-107).
- Completed three facility assessments and five facility/structure decontamination and decommissioning completions (FY 2000). Complete two facility assessments and one facility/structure decontamination and decommissioning completion (FY 2001/ID-ER-110).
- Initiated calcining of the sodium bearing waste in FY 1998, several years earlier than the Settlement Agreement Milestone, and continued to process liquid waste during FY 2000 (ID-HLW-101).
- Operate the High Liquid Level Waste Evaporator to empty pillar and panel tanks to heel level by June 2003 (FY 2001/ID-HLW-101).
- Initiate conceptual design on a project to provide new Resource Conservation and Recovery Act-compliant tankage to support future operations (FY 2001/ID-HLW-101).
- Submit incidental waste determination for sodium bearing waste and tank farm residuals to the Nuclear Regulatory Commission for review (FY 2001/ID-HLW-102).
- Perform all preconceptual design efforts in anticipation of initiating conceptual design in FY 2002 (FY 2001/ID-HLW-102).
- Begin title design for tank closure project (FY 2001/ID-HLW-105).
- Develop and implement a tank closure plan that addresses waste incidental to reprocessing, composite analysis, and performance assessment requirements (FY 2001/ID-HLW-105).
- Complete the acquisition and installation of replacement or new equipment critical to maintain existing operations in a safe and stable condition. Upgrades and replacements involve core equipment including telecommunications, scientific and business computing, vehicles and heavy equipment, laboratory and calibration equipment, electronic measurement and security/safety and health equipment, and miscellaneous shop equipment. Capital equipment acquisitions for FY 2001 will be in various stages of procurement, delivery, and installation (FY 2001/ID-OIM-101).
- Under the facility disposal initiative, all non-nuclear surplus facilities approved and funded for demolition will be in process or completed. In addition to non-nuclear activities, this program includes asbestos abatement and removal of underground lines and piping (FY 2001/ID-OIM-101).

- # Perform core function support activities and infrastructure operations (e.g., provide steam for 130 buildings, 147,000 kilowatt hours per day of electrical power, 2,500,000 gallons of water sewage treatment and maintain fire water lines). Perform landlord activities (overall building upkeep and repair) and complete construction or initiate planning for six general plant projects at the Idaho Nuclear Engineering and Technology Center (FY 2000/FY 2001/ID-OIM-102).
- # Completed shutdown of the Idaho National Technology Engineering Center Coal Fired Steam Generating Facility and converted steam production to the oil fired boilers. Operational cost saving is $2,000,000 per year (FY 2000/ID-OIM-102).
- # Completed transfer of the paper pelletizer (pilot development of technology done at Idaho) which was dismantled and shipped to the Savannah River Site for next phase utilization (full production) (FY 2000/ID-OIM-102).
- # Complete the scheduled Voluntary Consent Order activities at the Test Reactor Area including: complete hazardous waste determinations and disposition second quarter of Test Reactor Area legacy waste; and implement closure activities for the Engineering Test Reactor Sodium Loop and the Test Reactor Area 730 catch tanks per approved Resource Conservation and Recovery Act Closure Plans (FY 2000/FY 2001/ID-VCO-101 - formerly ID-OIM-116).
- # Finalize the Idaho Nuclear Technology and Engineering Center, hazardous waste determinations on the CPP-603 Basin Water Sand Filter and Demineralization System and negotiate actions; and complete transfer of the New Waste Calcining Facility calcine to CPP-601 D-Cell and disposition calcine handling tools (FY 2001/ID-VCO-101 - formerly ID-OIM-116).
- # Finalize site-wide tanks and system identification for all tanks on the tank list; and complete hazardous waste determinations or verification of empty on 5 percent of the tanks (FY 2001/ID-VCO-101 - formerly ID-OIM-116).
- # Continue analysis on smaller quantity miscellaneous spent nuclear fuel to demonstrate that it will be in compliance with the Office of Civilian Radioactive Waste Management repository license application submittal criteria (FY 2001/ID-SNF-101).
- # Complete specification for the DOE-EM spent nuclear fuel transportation system (FY 2001/ID-SNF-101).
- # Initiate a procurement with the award of a contract for design and certification of spent nuclear fuel transport casks (FY 2001/ID-SNF-101).
- # Issue data package guidelines for DOE spent nuclear fuel acceptance in the repository to the DOE spent nuclear fuel sites (FY 2001/ID-SNF-101).
- # Complete design of baskets for use with the DOE standardized canister set (FY 2001/ID-SNF-101).
- # Complete design and prototype testing of the Multi-Detector Analysis System demonstrating the ability to make fissile measurements on a wide variety of DOE spent nuclear fuel (FY 2001/ID-SNF-101).

- # Ensure the Idaho National Engineering and Environmental Laboratory spent nuclear fuel will be acceptable at the repository by providing spent nuclear fuel data to the National Spent Nuclear Fuel Program for inclusion in the repository Nuclear Regulatory Commission license application; prepare the site specific compliance plan for meeting the repository waste acceptance systems requirements document (FY 2001/ID-SNF-102).
- # Continue technology development for preparation of the Idaho National Engineering and Environmental Laboratory spent nuclear fuel for interim storage and packaging into standardized canisters that will meet the repository acceptance criteria, including deployment of gamma measurement technology and development of epoxy removal technology (FY 2001/ID-SNF-102).
- # Initiate detailed preparations for receipt of the spent nuclear fuel from the Oak Ridge Operations Office planned in FY 2002 and continue development of the Idaho National Engineering and Environmental Laboratory facilities spent nuclear fuel acceptance criteria to ensure program requirements are passed to the spent nuclear fuel shippers (FY 2001/ID-SNF-102).
- # Completed transfer of spent nuclear fuel from wet storage at CPP-603 to wet storage at CPP-666 and dry storage at the Irradiated Fuel Storage Facility (FY 2000/ID-SNF-103).
- # Receive foreign research reactor fuel shipments safely and without incident (FY 2000/FY 2001/ID-SNF-103).
- # Complete moving TMI-2 fuel from wet to dry interim storage per Settlement Agreement milestone (FY 2001/ID-SNF-103).
- # Receive and place the West Valley Nuclear Services 125 spent nuclear fuel assemblies into dry cask storage (FY 2001/ID-SNF-103).
- # Turn CPP-603 wet storage facilities over to decontamination and decommissioning (FY 2001/ID-SNF-103).
- # Receive spent nuclear fuel from Navy and the Advanced Test Reactor (FY 2000/FY 2001/ID-SNF-103).
- # Upgrade the CPP-666 heating, ventilation, and air conditioning and steam systems to ensure safe wet storage of DOE and Navy spent nuclear fuel through FY 2011 (FY 2001/ID-SNF-103).
- # Complete semiannual inventories of special nuclear material at the CPP-603 Irradiatent Fuel Storage Facility and make shipments of material to the Oak Ridge Operations Office (FY 2000/FY 2001/ID-SNF-103).
- # Complete shutdown of the Waste Experimental Reduction Facility incinerator and initiate closure activities (FY 2001/ID-WM-101).
- # Complete the Final Safety Analysis Report for retrieval for the Advanced Mixed Waste Treatment Project (FY 2001/ID-WM-105).
- # Obtained all Phase I environmental regulatory permits, awarded long-lead procurement subcontracts and started facility construction for the Advanced Mixed Waste Treatment Project (FY 2000/ID-WM-105).

- Provided for project and technical support for the Advanced Mixed Waste Treatment Project for Phase II (facility construction) efforts. Phase II of the project is discussed in ID-WM-104, Advanced Mixed Waste Treatment Project Asset Acquisition. Activities associated with ID-WM-105 include operations, which will begin in FY 2003 (FY 2000/FY 2001/ID-WM-105).
- Submit the Wastewater Land Application Annual Report summarizing sample results and operational performance, National Pollution Discharge Elimination System Discharge Monitoring Report summarizing storm water discharges, the National Emission Standards for Hazardous Air Pollutants Annual Report compiling radiological air effluent releases, and the Site-wide Environmental Monitoring Report summarizing site-wide environmental monitoring activities, and drinking water reports (FY 2001/ID-WM-106).
- Complete environmental monitoring activities to support DOE Orders 5400.1 and 435.1 and begin required groundwater monitoring and associated support tasks to support Wastewater Land Application Permit (FY 2001/ID-WM-106).
- Establish, control, and report on waste management projects to meet the commitments set forth in the Federal Facility Compliance Act that mandated compliance with the Idaho National Engineering and Environmental Laboratory Site Treatment Plan (FY 2001/ID-WM-108).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
ID-ER-102 / Test Reactor Area Remediation	639	1,188	700
ID-ER-103 / Idaho Chemical Processing Plant Remediation	5,927	20,825	12,000
ID-ER-107 / Radioactive Waste Management Complex Remediation	7,948	29,897	12,000
ID-ER-108 / Sitewide Monitoring Area Remediation	3,413	5,056	4,000
ID-ER-109 / Remediation Operations	9,118	12,115	6,000
ID-ER-110 / Decontamination and Decommissioning	2,557	4,115	0
ID-HLW-101 / High-Level Waste Pretreatment	45,577	38,744	38,964
ID-HLW-102 / High-Level Waste Immobilization Facility	0	10,987	3,550
ID-HLW-103 / High-Level Waste Treatment and Storage	15,576	9,069	7,805
ID-HLW-105 / Closure and Stabilization Activities	5,790	2,794	5,842
ID-OIM-101 / Site Wide Landlord Operations	25,600	26,841	27,654
ID-OIM-102 / Idaho Chemical Processing Plant Non-Process Plant Operations	41,849	42,952	32,650
ID-SNF-101 / National Spent Nuclear Fuel Program	16,441	15,802	10,000
ID-SNF-102 / Integrated Spent Nuclear Fuel Program	6,502	10,501	13,426
ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities	43,221	49,572	33,012
ID-SSI-101 / Subsurface Geoscience Laboratory	0	400	350
ID-VCO-101 / Environmental Legacy Compliance (VCO)	8,510	9,715	6,000

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
ID-WM-103 / INEEL Transuranic Waste	0	0	51,000
ID-WM-105 / AMWTP Production Operations	831	1,103	1,136
ID-WM-106 / Idaho National Engineering and Environmental Laboratory Site-wide Environmental Protection	6,232	6,337	7,462
ID-WM-108 / Integrated Waste Operations Program	9,078	5,483	3,000
Total, Idaho	254,809	303,496	276,551

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Idaho National Engineering and Environmental Laboratory	254,809	303,496	276,551	-26,945	-8.9%
Total, Idaho	254,809	303,496	276,551	-26,945	-8.9%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	8	5	0
Facilities Decommissioning			
Cleanup	5	1	0
Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	0	1,483
Spent Nuclear Fuel			
Moved to Dry Storage (MTHM)	3.0	79.0	.3

Site Description

Idaho National Engineering and Environmental Laboratory

The Idaho National Engineering and Environmental Laboratory, established as the National Reactor Testing Station in 1949, occupies 890 square miles in the Snake River Plain of Southeastern Idaho.

Over the years, 52 reactors have been constructed and operated at the Idaho National Engineering and Environmental Laboratory. The Idaho National Engineering and Environmental Laboratory has nine primary facilities as well as administrative, engineering, and research laboratories in Idaho Falls, approximately 50 miles

east of the site. Other activities at the Laboratory over the last five decades include nuclear technology research, defense programs, engineering testing and operations, as well as ongoing projects to develop, demonstrate, and transfer advanced engineering technology and systems to private industry. These activities have resulted in an inventory of high-level waste and an inventory and continued generation of transuranic waste, mixed low-level, and low-level waste. Waste storage, treatment, and disposal capabilities for these ongoing programs are provided through operations at the Waste Reduction Operations Complex, the Radioactive Waste Management Complex, Test Area North, and the Idaho Nuclear Technology Engineering Center (formerly the Idaho Chemical Processing Plant). The Idaho National Engineering and Environmental Laboratory is responsible for storing and dispositioning 560 m^3 of spent nuclear fuel from a number of sources, including the Navy, foreign and domestic research reactors, and some commercial reactors, along with Department of Energy owned fuel. Environmental remediation activities are required at ten Waste Area Groups encompassing 50 different operable units, which are comprised of 468 total release sites and facilities. Five Waste Area Groups are part of this appropriation. Potential release sites include tanks, spills, disposal sites, wastewater disposal systems, leach pits, trenches, rubble piles, ponds, cooling towers, wells, landfills, storage areas, and surplus buildings.

Infrastructure projects (grounds, roads, general purpose buildings, utilities, communications, computers and information, fleet management, emergency services, analytical laboratories, and environmental test facilities) ensure the integrity of required facilities until all commitments are completed. Site-wide core support functions include integrated facility planning, emergency preparedness, seismic and environmental monitoring, and safety and health corrective actions. Other ongoing activities include regulatory affairs, nuclear safety, radiation protection, utility operations and maintenance, quality assurance, work control, document control, warehousing, and facility management. In addition, general plant projects and installation of general purpose capital equipment, line-item construction projects ensure the site facilities can support basic mission needs.

Infrastructure operations at the Idaho Nuclear Technology Engineering Center directly support the high-level waste, spent nuclear fuel, and deactivation programs. This program provides operations and maintenance of non-process services including utilities, facilities, roads/grounds, equipment/materials management, and custodial care. Crosscutting technical services at the Idaho Nuclear Technology Engineering Center, such as engineering, nuclear safety and management oversight, will also be provided.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Idaho National Engineering and Environmental Laboratory is managed through an incentivized management and operating contract, with fixed-price subcontracts, to ensure the most cost efficient service to the Government. Contract performance is driven and measured through the Performance Evaluation Management Plan process which updates, annually, the performance requirements by defining 5-year critical outcomes, 1 to 3-year performance objectives, and current year performance criteria. The scope planned for FY 2002 has been reviewed and is appropriate to meet many of the requirements of the Settlement Agreement with the State of Idaho and other compliance challenges associates with applicable requirements, while also maintaining the capability of the Idaho National Engineering and Environmental Laboratory to meet DOE mission objective. Estimates for the remediation work were derived from the "Idaho National Engineering and Environmental Laboratory Cost Estimating Handbook", which uses approved rates based on historical work performed at the site.

ID-ER-102 / Test Reactor Area Remediation 639 1,188 700

This project provides for the remediation of the Test Reactor Area as required by the Federal Facilities Agreement/Consent Order and the Comprehensive Environmental Response, Compensation, and Liability Act at the Idaho National Engineering and Environmental Laboratory.

Funding supports the completion of the assessment of these five sites and groundwater monitoring until the year 2004 when all activities will be transferred to WAG-10.

Implement long-term monitoring of new sites in Operable Unit 2-14 by adhering to the Operations and Maintenance Plan for Institutional Controls and finalizing decisions for new sites in Operable Unit 2-14 (sites identified as TRA-56 through TRA-60).

Metrics			
Release Site			
Cleanups	8	5	0

ID-ER-103 / Idaho Chemical Processing Plant Remediation . . . 5,927 20,825 12,000

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project is to complete assessment, remedial design/remedial action cleanup, and long-term monitoring and maintenance activities for the Idaho Nuclear Technology and Engineering Center (used for storage and reprocessing spent nuclear fuel). Waste Area Group 3 consists of five major activities: Operable Unit 3-13 remedial design/remedial action; Operable Unit 3-13 groundwater response; the Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility; the Comprehensive Environmental Response, Compensation, and Liability Act waste management; and the Operable Unit 3-14 Remedial Investigation/Feasibility Study. The first four are authorized pursuant to the Operable Unit 3-13 Comprehensive Record of Decision signed in 1999. Remedial actions for Operable Unit 3-13 are underway and the Operable Unit 3-14 Record of Decision is planned for FY 2009.

- # Continue Title II (90 percent design) and continue construction for the Idaho Nuclear Technology and Engineering Center Comprehensive Environmental, Response, and Liability Act Disposal Facility.
- # Continue Phase I construction on the disposal facilities Staging, Storage, Stabilization, and Treatment Facility.
- # Continue work on the Operable Unit 3-14 Tank Farm Remedial Investigation/Feasibility Study.
- # Prepare disposal facilities draft Waste Acceptance Criteria.
- # Continue monitoring the Snake River Plain Aquifer through existing wells.
- # Continue Phase II, well construction (9 wells) and continue monitoring Perched Water drain out.
- # Continue construction of the Replacement Percolation Ponds and initiate startup operations.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Key Milestones

- # Operable Unit 3-13 Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility draft Title I 30 percent preliminary design sent to DOE-Idaho Operations Office (April 2001).
- # Operable Unit 3-13 Staging, Storage, Stabilization, and Treatment Facility draft Title II Design/Remedial Action work plan sent by DOE-Idaho Operations Office to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (November 2001).
- # Operable Unit 3-13 Group 5 draft Monitoring Report/Decision Summary will be sent to DOE-Idaho to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (April 2002).
- # Operable Unit 3-13 Group 3 draft Prioritization and Site Grouping will be sent by DOE-Idaho Operations Office to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (May 2002).
- # Operable Unit 3-13 Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility draft Title II design will be sent by DOE-Idaho Operations Office to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (September 2002).

ID-ER-107 / Radioactive Waste Management Complex

Remediation	**7,948**	**29,897**	**12,000**

This project is to complete assessment and remediation activities for the Radioactive Waste Management Complex, which was a 97-acre burial ground for transuranic, radioactive, and hazardous waste. The site was in operation from 1952 to 1970. Located within the Radioactive Waste Management Complex is the one acre Pit 9 Site. Pit 9 was selected to demonstrate the feasibility of retrieving and treating transuranic, radioactive, and hazardous waste. The focus of this project is the cleanup of radioactive and hazardous contaminants in accordance with a 1993 Pit 9, 1994 Pad A, and 1995 Vadose Zone Organics Interim Record of Decisions; to continue work on the Comprehensive Remedial Investigation/Feasibility Study due March 2002; and to continue work on a final Record of Decision for all of Waste Area Group 7 due in December 2002.

This project includes funding for the former Pit 9 project now known as Operable Unit 7-10, Staged Interim Action Project.

- # Operable Unit 7-13/14: (Transuranic Waste Pits and Trenches)

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- < Prepare final Remedial Investigation/Feasibility Study report;
- < Prepare draft Proposed Plan and draft Record of Decision;
- < Monitor perched water and groundwater, 5-year review and monitoring of cap on Pad A;
- < Issue final report on vitrification treatability study testing;
- < Conduct field test for in-situ grouting and prepare final report; and

Operable Unit 7-08: (Organic Contamination in the Vadose Zone)

- < Prepare Phase II Remedial Action Report; and
- < Prepare Phase III Operations Strategy, Vapor Vacuum Extraction and treatment operations, and vadose zone monitoring.

Operable Unit 7-10: (Staged Interim Action)

- < Prepare State II Final Draft Remedial Design/Remedial Action Work Plan; and
- < Continue ongoing litigation activities for the original Pit 9 Project.

The Office of Science and Technology proposes to evaluate options for verification that residual in-ground contaminants are immobilized. This will be a multi-year effort involving identification and testing of available and emerging long lived sensors.

ID-ER-108 / Sitewide Monitoring Area Remediation 3,413 5,056 4,000

Waste Area Group 6/10 consists of 85 (47 new sites) potential release sites, which require assessment as stipulated in the Federal Facilities Agreement/Consent Order and Comprehensive Environmental Response, Compensation, and Liability Act. The Operable Unit 10-4 Draft Record of Decision, to be submitted in April 2002, will describe the final remedial actions which must be performed at these sites.

Waste Area Group 10 also includes the Idaho National Engineering and Environmental Laboratory sitewide groundwater analysis. This analysis will evaluate the cumulative impacts of groundwater contamination that has been released at the Idaho National Engineering and Environmental Laboratory. The analysis will be completed as part of the Operable Unit 10-08 Record of Decision scheduled to be developed by FY 2004.

Develop the Operable Unit 10-04 Record of Decision and Remedial Design/Remedial Action Scope of Work and develop the Operable Unit 10-08 Remedial Investigation/Feasibility Study Work Plan and Remedial Investigation/Baseline Risk Assessment.

Continue to support the Idaho National Engineering and Environmental Laboratory Hydrogeologic Data Repository and the Integrated Groundwater Monitoring Program. These two programs provide information and services that are required to support Federal Facilities Agreement and Consent Order activities at all of the Idaho National Engineering and Environmental Laboratory Waste Area Groups.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Key Milestones

- # Operable Unit 10-04 Draft Remedial Investigation/Feasibility Study Record of Decision will be sent to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (April 2002).
- # Operable Unit 10-04 Draft Record of Decision/Remedial Action Statement of Work will be sent by DOE-Idaho Operations Office to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (August 2002).
- # Operable Unit 10-08 Draft Remedial Investigation/Feasibility Study work plan will be sent by DOE-Idaho Operations Office to the Environmental Protection Agency/Idaho Department of Health and Welfare for review (September 2002).

ID-ER-109 / Remediation Operations 9,118 12,115 6,000

The Remediation Operations work scope provides program management and technical support for assessment and cleanup projects conducted under the Federal Facilities Agreement and Consent Order, the Decontamination and Decommissioning and Deactivation Program, and the Surplus Facilities Surveillance and Maintenance Project. The work scope for remediation operations provides for: baseline control/reporting/cost engineering; technical program integration; community relations/Administrative Record coordination; environmental/safety/health and quality support; configuration/data/records management; DOE-Headquarters interface; Field operations coordination; sample/risk management support; and the State of Idaho's Federal Facilities Agreement and Consent Order participation.

- # Maintain detailed work planning process to fully evaluate resource adequacy, establish procurement strategies, and define cleanup metrics, support evaluation of evolving programmatic risks and regulatory changes to project cost, scope, and schedule.
- # Provide PBS baseline control/reporting, configuration/records/data/sample management, environment/safety/health/quality general support, and project/field operations technical support required to meet the Federal Facilities Agreement and Consent Order enforceable milestones. Consolidation of these activities reduces incremental costs, streamlines processes, and ensures consistency in the implementation of technical/administrative requirements.

ID-ER-110 / Decontamination and Decommissioning 2,557 4,115 0

This project is to eliminate the hazards posed by some 307 inactive radiologically contaminated facilities at the Idaho National Engineering and Environmental Laboratory, which may cause risk to site workers and the environment.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Current conditions allow for the deferral of these activities to support higher priority tasks.

Metrics			
Facilities Decommissioning			
Cleanup	5	1	0

ID-HLW-101 / High-Level Waste Pretreatment 45,577 38,744 38,964

The mission of this project is to safely store and pretreat high-level waste and other waste stored or managed by the Idaho Nuclear Technology and Engineering Center High-Level Waste Program, including: sodium bearing waste; calcined solid waste; debris; and filters. Debris and filter waste from the Idaho Nuclear Technology and Engineering Center area is treated to remove the hazardous constituents such that it can be disposed as low-level waste.

Via a modification to a Consent Order on hazardous waste management with the State of Idaho, the Department of Energy agreed to place the calciner in standby, pending completion of an Environmental Impact Statement, which evaluates alternatives to calcination. The Environmental Impact Statement decision process has selected vitrification as the preferred alternative for treatment and disposal of the liquid sodium bearing waste and calcine, pending issuance of a record of decision. Provides for Environmental, Safety, Health, and Quality Assurance, waste minimization and permitting of Resource Conservation Recovery Act facilities.

Operate the tank farm to store radioactive liquid waste, and safely store high-level waste calcine.

Operate the High-Level Liquid Waste Evaporator to reduce the volume stored in the tanks and allow cease use of the pillar/panel vaulted tanks by FY 2003.

Operate the Filter Leach and Debris Treatment processes to further reduce backlogs and meet regulatory commitments.

Perform waste characterization and analysis to support the Resource Conservation and Recovery Act permitting activities.

Continue to reduce generation of new liquid wastes.

Continue conceptual design on a project to provide new Resource Conservation and Recovery Act - compliant tanks to support future operations.

Provide for roof repairs for the Atmospheric Protection Facility (CPP-649).

Key Milestones
Empty either pillar and panel vaulted waste tank WM-184 or WM-186 (September 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Empty either pillar and panel vaulted waste tank WM-184 or WM-186 (January 2002).

ID-HLW-102 / High-Level Waste Immobilization Facility 0 10,987 3,550

The purpose of the High-Level Waste Immobilization Project is to complete the design/construction and operations of those new facilities at the Idaho Nuclear Technology and Engineering Center which are required to treat the sodium bearing and calcine radioactive waste using a vitrification process. These new facilities are necessary to satisfy the State Agreement which requires that the Department of Energy treat/remove the sodium bearing waste, which is stored in the existing Idaho Nuclear Technology and Engineering Center Tank Farm Facility by December 2012 and make the sodium bearing waste and calcine waste ready for out of state disposal by December 2035. This PBS includes the technology development needed to support vitrification of sodium bearing waste.

Complete the preliminary hazards analysis for the Vitrification facility.

Commence conceptual design for the sodium-bearing waste treatment (vitrification) project, using either site Management and Operations contractor or competitively selected contractor(s).

Conduct Technology Development pilot studies for melter operations and other support activities as outlined in the Sodium Bearing Waste Roadmap.

ID-HLW-103 / High-Level Waste Treatment and Storage 15,576 9,069 7,805

The High-Level Waste Treatment and Storage project provides strategy and long-range program planning for the Idaho National Engineering and Environmental Laboratory High-Level Waste Program. It includes: 1) feasibility studies for treatment of program wastes; 2) characterization of calcine and technology development for future calcine treatment and process improvements; 3) support of the High-Level Waste and Facilities Disposition Environmental Impact Statement; 4) Resource Conservation and Recovery Act delisting of high-level waste; 5) program oversight for management of radioactive liquids, calcine, and mixed debris; and 6) maintenance of technology development facilities.

Plan to treat and dispose of high-level waste and sodium-bearing waste to meet the Department of Energy Idaho milestones in the Settlement Agreement, Consent Orders, and the Site Treatment Plan.

Provide technology development of processes for treating and disposing of high-level waste and sodium-bearing waste, including pilot plant studies to study and improve waste loadings and design life, flow sheet characteristics, conditioning and immobilizing low activity waste generated during separations, development of improved air filtration technology for calcine retrieval and developing at tank characterization equipment and methodologies. Funding for complementary tasks is included within the Office of Science and Technology budget.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Office of Science and Technology is proposing to assist development of conceptual and title designs for a facility to treat and stabilize sodium bearing waste and will minimize technical uncertainties in vitrification and/or separations processes; especially cesium removal, if selected as treatment process.

Key Milestones

Idaho high-level waste and facility disposition final environmental impact statement to Headquarters for review (February 2001).
Issue final Idaho acquisition strategy for implementation of sodium bearing waste treatment preferred alternative (May 2001).

ID-HLW-105 / Closure and Stabilization Activities 5,790 2,794 5,842

The purpose of this project is to close the high-level waste tanks after treatment operations are completed in accordance with the requirements of the Resource Conservation and Recovery Act, and prior to final Comprehensive Environmental Response, Compensation, and Liability Act closure. The project includes development and demonstration of the method to remove treat and/or immobilize any tank waste residuals to support tank closures. By 2005, the DOE will clean/flush the tanks heels, remove them and immobilize any residual waste remaining in the tanks for two of the eleven 300,000 gallon tanks in the high-level waste tank farm. This will be followed by closure of additional tanks as they are emptied. All tanks are planned to be emptied by FY 2012 and closed by FY 2016. The New Waste Calcining Facility Closure project includes interim closure of the calcination's system portions of the New Waste Calcining Facility.

Technology development work on tank closure will also be accomplished and will include improving waste transfer pumping of solids, enhancing grout formulations to assist in tank closure heel solidification, improving tank integrity inspections and work on waste sampling at-tank analysis. Funding for these activities are included within the Office of Science and Technology budget.

The Closure and Stabilization Project scope supports closure activities for the Idaho Nuclear Technology and Engineering Center Tank Farm Facility. These tanks will be closed in phases over the next fifteen years due to cessation of spent nuclear fuel reprocessing at the Idaho Nuclear Technology and Engineering Center and because the tank vaults cannot be inspected and verified to meet current secondary containment and seismic standards.
Complete decontamination for WM-182 and WM-183 and the Tier II Closure Plan for these tanks.
Closure plans and activities will also be conducted for other systems/facilities as they are identified.
The Office of Science and Technology proposes to support development and demonstration of technologies to retrieve and stabilize the tank heel and immobilize any final residual waste in tanks.

Key Milestones

(dollars in thousands)

FY 2000	FY 2001	FY 2002

New Waste Calcining Facility closure plan response (March 2002).

ID-OIM-101 / Site-wide Landlord Operations 25,600 26,841 27,654

The Site Wide Landlord Operations consists of four projects which perform core functions required by multiple and varied EM program missions at the Idaho National Engineering and Environmental Laboratory. The projects are Site Wide Base Support, Facility Upgrades, Capital Acquisitions, Facility Disposal Initiative and Business Systems Improvement Project. Through these activities this project provides base services; general plant project and line item project planning, design, and construction; acquisition and installation of general purpose capital equipment; and non-radioactive, surplus facility disposal.

This project is necessary for the EM mission to meet the requirements of the EM sites' baseline planning data in a safe and environmental compliant manner and to ensure the Idaho National Engineering and Environmental Laboratory cleanup completion.

Continue Site-Wide Base Support Project activities including integrated planning, emergency preparedness, and seismic monitoring. Also supports external and stakeholder activities.

Continue previously initiated general plant projects; continue planning, design, and construction management for line-item projects.

Continue capital equipment acquisitions involving the procurement and installation of equipment critical to maintain existing operations in a safe and stable condition. Replacements and upgrades include telecommunications, vehicles and heavy equipment, laboratory and calibration equipment, Environmental Safety and Health and shop equipment.

ID-OIM-102 / Idaho Chemical Processing Plant Non-Process Plant Operations 41,849 42,952 32,650

This project is to perform the Landlord/infrastructure functions required by multiple and varied programs at the Idaho Nuclear Technology and Engineering Center including: commercial electrical power payment; cross-cutting Environmental, Safety, Health, and Quality Assurance, training, nuclear safety, engineering, and document services; and maintenance of the plant facilities and roads and grounds. This PBS provides general plant projects and line-item control projects planning, design and construction. These core functions support other programs in meeting regulatory and the Idaho Settlement Agreement requirements relative to the High-Level Waste and Spent Nuclear Fuel Programs.

Perform commercial electrical power payment and cross-cutting Environmental, Safety, Health, and Quality Assurance, Nuclear Safety, Engineering, Document Services, and Training activities to support high-level waste and spent nuclear fuel.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Provides for operation and maintenance for the Idaho Nuclear Technology and Engineering Center Utility Systems (electric, water, steam, compressed in and sanitary waste) 24 hours/day, 365 days/year.
- # Provides for landlord and maintenance of the Idaho Nuclear Technology and Engineering Center Buildings, project management, radiation control, nuclear safety, industrial hygiene, personnel health and safety and questions and answers.
- # Complete annual General Plant Project and Line-Item Construction Project Five to Ten Year Plan update.
- # Provides for safe and secure storage of a wide variety of unirradiated and irradiated fuel in the Spent Fuel Storage Facility CPP-651.

ID-SNF-101 / National Spent Nuclear Fuel Program 16,441 15,802 10,000

The objective of the National Spent Nuclear Fuel Program work scope is to define and ensure resolution of all associated issues for the characterization, safe interim storage, and proper final disposition of all U.S. Department of Energy Spent Nuclear Fuel. The National Spent Nuclear Fuel Program provides technology solutions and guidance for safe, efficient management of DOE spent nuclear fuel operating sites. In addition, it supports the repository program managed by the Office of Civilian Radioactive Waste Management by providing the analyses and research needed to include all DOE spent nuclear fuel in the planned repository license application.

- # Continue analysis on DOE spent nuclear fuel to demonstrate that it will be included in the Office of Civilian Radioactive Waste Management repository license application and ultimately accepted at the repository. Continue materials analysis and development activities to ensure that DOE spent nuclear fuel can be packaged, stored, and ultimately disposed of in the repository.
- # Preparation for contract award for the DOE-EM spent nuclear fuel transportation system and initiation of design.
- # Maintain a quality assurance program that is in compliance with RW-0333P.
- # Continue long-term release rate testing and chemical reactivity analysis of DOE spent nuclear fuel as a demonstration that DOE spent nuclear fuels is meeting the repository criteria
- # Assist sites in preparing their DOE spent nuclear fuel for disposal.

ID-SNF-102 / Integrated Spent Nuclear Fuel Program . . . . . 6,502 [a] 10,501[a] 13,426[a]

[a] In additional to this funding, the Department's Cost of Work for Others program includes $1,400,000 in FY 2000, $1,200,000 in FY 2001, and $1,600,000 in FY 2002 of revenues received for the Foreign Research Reactor receipts program at the Idaho Operations Office.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project is to support on-site compliance with the Idaho Settlement Agreement through the DOE Spent Nuclear Fuel Dry Storage Project, program management, technology development, continued fuel receipts from foreign and domestic reactors and DOE sites, and fuel shipments to other Department of Energy sites.

- # Continue support to the Privatized Spent Nuclear Fuel Dry Transfer and Storage Facility, including support for Phase 1B of contact.
- # Continue to improve overall program plans for interim dry storage, fuel receipts, and shipment to the repository.
- # Ensure the Idaho National Engineering and Environmental Laboratory spent nuclear fuel will be acceptable at the repository by providing spent nuclear fuel data to the National Spent Nuclear Fuel Program for inclusion in the repository Nuclear Regulatory Commission license application.
- # Continue technology development for preparation of the Idaho National Engineering and Environmental Laboratory spent nuclear fuel for interim storage and packaging into standard canisters.
- # Receive one shipment of spent nuclear fuel from the Oak Ridge Reservation and make preparations for future receipt of spent nuclear fuel.
- # With the support of the Office of Science and Technology, provide for non-destructive assay and evaluation of the spent nuclear fuel, cladding, and packaging for storage and disposal.
- # Detailed planning for the transfers of spent nuclear fuel to the spent nuclear fuel/digital signal processor contractor and of Experimental Breeder Reactor-II spent nuclear fuel to the Argonne National Laboratory-West will be completed.
- # Maintain the Criticality Safety Program for the Idaho National Engineering and Environmental Laboratory.

Key Milestones
Be prepared to receive up to one shipment of Foreign Research Reactor Spent Nuclear Fuel (September 2001).

ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities	**43,221**	**49,572**	**33,012**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project is to ensure on-site compliance with the Idaho Settlement Agreement through movement of the spent nuclear fuel from wet to dry storage by December 31, 2023, and removal of all spent nuclear fuel from the Idaho National Engineering and Environmental Laboratory by January 1, 2035. This includes safe operation and transition of the following spent fuel storage facilities to deactivation: 1) Idaho Nuclear Technology and Engineering Center CPP-603 and CPP-666 underwater storage basins; 2) Test Area North TAN-607 underwater storage basin and dry cask storage; 3) Idaho Nuclear Technology and Engineering Center CPP-749 underground dry storage vault; 4) Idaho Nuclear Technology and Engineering Center CPP-603 Irradiated Fuel Storage Facility dry storage vault; 5) Ft. St. Vrain (near Denver, Colorado) Nuclear Regulatory Commission-licensed dry storage Independent Spent Fuel Storage Installation; and 6) Idaho Nuclear Technology and Engineering Center CPP-1774 Nuclear Regulatory Commission-licensed Independent Spent Fuel Storage Installation.

- # Receive Advanced Test Reactor spent nuclear fuel shipments at CPP-666 and start preparations for shipping Navy spent nuclear fuel back to the Naval Reactors Facility.
- # Commence removal of Loss of Fluid Test/commercial spent nuclear fuel from TAN-607 pool and place it into interim dry storage.
- # Continue to perform surveillance and monitoring of the dry stored spent nuclear fuel at Fort St. Vrain.
- # Continue surveillance and monitoring of spent nuclear fuel at CPP-1774.
- # Complete semiannual inventories of spent nuclear fuel and make shipment of spent nuclear fuel to the Oak Ridge Operations Office.

Metrics			
Spent Nuclear Fuel			
Moved to Dry Storage (MTHM)	3.0	79.0	0.3
Key Milestones			
# Complete transfer of Three-Mile-Island spent nuclear fuel from Test Area North to the Dry Storage Facility (June 2001).			

ID-SSI-101 / Subsurface Geoscience Laboratory 0 400 350

Construct a Subsurface Geosciences Laboratory to improve the understanding of subsurface contaminant fate and transport through an enhanced linkage between laboratory results and field observations. Meso-scale (pilot-scale) experiments will study and quantify biological, geochemical and fluid transport processes, and the coupling among these processes, that control the movement and transformation of contaminants in the subsurface. The meso-scale experiments will be linked on the one hand with the results of laboratory studies, and on the other hand with field-scale experiments, and will result in new and improved technology for cleanup, monitoring and long-term, reliable predictions.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Continue Conceptual Design and complete draft Project Execution Plan.
- # Initiate Environmental/National Environmental Protection Agency documentation.

Key Milestones

- # Successfully execute the Subsurface Geosciences Laboratory Project Conceptual Design (September 2001).

ID-VCO-101 / Environmental Legacy Compliance (VCO) 8,510 9,715 6,000

The Department of Energy and the State of Idaho Division of Environmental Quality signed the June 2000 Consent Order (known as the Voluntary Consent Order) on June 14, 2000. The Voluntary Consent Order covers various matters where the Idaho National Engineering and Environmental Laboratory is not in regulatory compliance with the Resource Conservation and Recovery Act. For each covered matter, the issue description, action summary, and milestones have been discussed with the Idaho Division of Environmental Quality to identify an acceptable path forward to bring the matter into regulatory compliance. If a milestone is not met, stipulated penalties of $1,000/day/violation will be assessed.

- # At the Idaho Nuclear Test Engineering Center, continue disposition the calcine handling tools, and submit the draft Resource Conservation Recovery Act Closure Plan for tanks at CPP-603.
- # At the Test Reactor Area, continue disposition of second 25 percent of items on the legacy waste list and initiate characterization of third 25 percent; continue the Resource Conservation and Recover Act Closure activities for the TRA-730 catch tank system; and continue the Resource Conservation Recovery Act Closure activities for the Engineering Test Reactor Sodium Loop.
- # At the Power Burst Facility, continue characterization activities for items on the equipment list.
- # At the Test Area North, characterize the TAN-616 system and prepare the hazardous waste determinations.
- # For Site-wide Voluntary Consent Order tanks, continue hazardous waste determination/verification of empty for 15 percent of the tanks.

Key Milestones

- # Site Tank 005-2 (March 2001).
- # New CPP-020-1 (March 2001).
- # New CPP-016-2 (March 2001).
- # New TAN-008-1 (March 2001).
- # New TAN-008-2 (March 2001).
- # New TRA-001-1 (June 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

New CPP-016-1 (June 2001).
Site Tank-005-3 (September 2001).
New TRA-001-2 (September 2002).
VCO-5.1.ll(a)-1 (September 2002).
Site Tank-005-4 (September 2002).

ID-WM-103 / INEEL Transuranic Waste 0 0 51,000

The mission of the Transuranic Waste Project is to provide environmentally safe and compliant management of 65,000 m^3 of contact-handled and remote-handled transuranic and mixed transuranic waste retrievably stored at the Radioactive Waste Management Complex until final waste disposition is achieved by December 31, 2018. This includes the characterization, certification, and transportation of up to 3,100 m^3 of stored transuranic waste out of Idaho by December 31, 2002, to meet an enforceable agreement milestone. Capabilities to retrieve and achieve disposition of remote-handled transuranic waste will be developed. Infrastructure support for Radioactive Waste Management Complex is provided to ensure compliance with authorization basis requirements necessary to accomplish project mission and maintain facility systems, structures, and components.

Provide Resource Conservation and Recovery Act-compliant storage for transuranic waste.
Provide facility base operations support services to ensure safe, environmentally compliant operations, maintenance, environment, safety and health support, updates to safety and health documents, and required monitoring and inspections.
Maintain certification authority for transuranic waste.
Provide infrastructure support to maintain compliance with the authorization basis, maintain a qualified workforce, and perform maintenance of systems, structures, and components.
Continue activities for transfer of facilities and equipment to the Advanced Mixed Waste Treatment Project.
Continue to characterize, certify, and ship transuranic waste to the Waste Isolation Pilot Plant.

Metrics			
Volume of Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	0	1,483

Key Milestones
Complete 1,160 m^3 of transuranic waste to the Waste Isolation Pilot Plant (Cumulative 1,289 m^3) (September 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

ID-WM-105 / AMWTP Production Operations 831 1,103 1,136

The purpose of the Advanced Mixed Waste Treatment Project is to procure, construct, and operate a facility to retrieve, treat and prepare for shipment 65,000 m3 of transuranic and alpha low-level mixed waste, currently stored at the Idaho National Engineering and Environmental Laboratory's Radioactive Waste Management Complex, for final disposal at the Waste Isolation Pilot Plant. The Advanced Mixed Waste Treatment Project is divided into three phases: Phase I provides for licensing, permitting, preliminary design, and a National Environmental Project Agency evaluation; Phase II provides for construction of the facility and transition of the Radioactive Waste Management Complex retrieval and storage operations from the current Management and Operating contractor to BNFL, Inc.; Phase III provides for facility operations, closure and decontamination and decommissioning.

- # Project and technical support during Phase II (construction) of the Advanced Mixed Waste Treatment Facility, including update, maintenance and execution of a Memorandum of Agreement between BNFL Inc., DOE-Idaho Operations Office and the Idaho National Engineering and Environmental Laboratory Management and Operating contractor; and support for the DOE-Idaho Operations Office project office during Phase II of the Advanced Mixed Waste Treatment Project.

ID-WM-106 / Idaho National Engineering and Environmental Site-wide Environmental Protection 6,232 6,337 7,462

This project is responsible for implementing programs that are mandatory for environmental compliance at the Idaho National Engineering and Environmental Laboratory. This project provides and interprets data needed to ensure protection of human health and the environment. Compliance with regulations is achieved by: interpreting the regulations and their impact on the Idaho National Engineering and Environmental Laboratory; providing site-wide guidance; preparing permit applications for well drilling activities, ponds, storm water, air; establishing monitoring/surveillance programs for air, water, soils, and biota; preparing the required reports and maintaining project files according to Quality Assurance Management System.

- # Continue to collect, compile and interpret data for the publication of the following reports/plans: Annual Wastewater Land Application Site Performance Report for the Idaho National Engineering and Environmental Laboratory, Environmental Monitoring Program Report for the Idaho National Engineering and Environmental Laboratory, Permit Application for Well Construction, Water Use Report, Shallow Injection Well Report, National Emission Standards for Hazardous Air Pollutants Annual Report, Air Emission Inventory, Stormwater Pollution Prevention Plan, Stormwater Monitoring Report, monthly drinking water reports and semi-annual reports to the City of Idaho Falls.
- # Continue to serve as focal point for sitewide environmental monitoring and environmental compliance.

Key Milestones

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Install and operate instrumented boreholes and wells adjacent to the Idaho Nuclear Technology Engineering Center percolation ponds (August 2001).

ID-WM-108 / Integrated Waste Operations Program 9,078 5,483 3,000

Establish, control, and report on waste management projects to meet the commitments of the Idaho National Engineering and Environmental Laboratory Site Treatment Plan (provide for base program management control, execution, and reporting systems along with financial management systems). Pursue waste management related activities that support the objectives of the Idaho National Engineering and Environmental Laboratory's Institutional Plan. Inform stakeholders of mission plans and activities at the Idaho National Engineering and Environmental Laboratory, receive input, and gain acceptance for waste management projects from stakeholders. Provide and assess programmatic compliance with applicable environmental regulations, safety and health protection, and evaluate ecological risk assessment issues.

- # Provide for EM Integration activities and meet the commitments set forth in the Idaho National Engineering and Environmental Laboratory Site Treatment Plan.
- # Provide for base program management control, execution, and reporting systems along with financial management systems.
- # Pursue waste management related activities that support the objectives of the Idaho National Engineering and Environmental Laboratory's Institutional Plan.
- # Inform stakeholders of mission plans and activities at the Idaho National Engineering and Environmental Laboratory, receive stakeholder input, and gain stakeholder acceptance for waste management projects.
- # Provide for assessment of programmatic compliance with environmental regulations, safety and protection, and quality.
- # Provide funding for independent oversight activities.

Total, Idaho 254,809 303,496 286,551

Explanation of Funding Changes from FY 2001 to FY 2002

FY 2002 vs. FY 2001 ($000)

ID-ER-102 / Test Reactor Area Remediation

Decrease in funding reflects support of funding higher priority activities. . . . . -488

	FY 2002 vs. FY 2001 ($000)
ID-ER-103 / Idaho Chemical Processing Plant Remediation	
# Funding decrease is due to support funding of higher priority activities.	-8,825
ID-ER-107 / Radioactive Waste Management Complex Remediation	
# Decrease in funding reflects changes in priorities within the cleanup program and replanning of specific assessment and cleanup activities.	-17,897
ID-ER-108 / Sitewide Monitoring Area Remediation	
# Funding decrease is due to support funding of higher priority activities.	-1,056
ID-ER-109 / Remediation Operations	
# Funding decrease is due to support funding of higher priority activities.	-6,115
ID-ER-110 / Decontamination and Decommissioning	
# Funding decrease is due to support funding of higher priority activities.	-4,115
ID-HLW-101 / High-Level Waste Pretreatment	
# Increase reflects current vitrification alternative. The new cesium ion exchange scope and associated technology development have been removed from this PBS and the vitrification work is now in PBS ID-HLW-102.	220
ID-HLW-102 / High-Level Waste Immobilization Facility	
# Decrease reflects the completion of the preliminary hazards analysis for the Vitrification facility.	-7,437
ID-HLW-103 / High-Level Waste Treatment and Storage	
# Decrease reflects elimination of scope in support of the Idaho Nuclear Technology Engineering Center technology development.	-1,264
ID-HLW-105 / Closure and Stabilization Activities	
# Increase reflects waste tank closure studies to complete waste characterization and general closure activities.	3,048
ID-OIM-101 / Site-wide Landlord Operations	
# Increase reflects desire to reduce identified FY 2002 backlog of Site Wide Infrastructure Facility Upgrades.	813
ID-OIM-102 / Idaho Chemical Processing Plant Non-Process Plant Operations	
# Decrease reflects a reduction in Capital Project (General Plant Projects/Line-Item Construction Projects) work scope.	-10,302
ID-SNF-101 / National Spent Nuclear Fuel Program	
# Decrease reflects effort to support other higher program priorities.	-5,802

	FY 2002 vs. FY 2001 ($000)
ID-SNF-102 / Integrated Spent Nuclear Fuel Program	
# Increase to support utilities and operations support for the privatized Spent Nuclear Fuel Dry Storage project and to implement Phase I-B of the contract.	2,925
ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities	
# Decrease due to completion of the Three Mile Island-2 spent nuclear fuel transfer and turnover of the CPP-603 basins to deactivation.	-16,560
ID-SSI-101 / Subsurface Geoscience Laboratory	
# Decrease is based on conceptual design status.	-50
ID-VCO-101 / Environmental Legacy Compliance (VCO)	
# Decrease in funding is due to support funding higher priority activities.	-3,715
ID-WM-103 / INEEL Transuranic Waste	
# Increase in funding is due to support for characterization and shipment of transuranic waste to the Waste Isolation Pilot Plant.	51,000
ID-WM-105 / AMWTP Production Operations	
# Increase due to increased management and operating contractor and DOE project office support required for Phase II construction activities.	33
ID-WM-106 / INEEL Site-wide Environmental Protection	
# Increase due to addition of scope to support the Idaho National Engineering and Environmental Laboratory Waste Water Land Application permitting and monitoring activities.	1,125
ID-WM-108 / Integrated Waste Operations Program	
# Funding decrease is due to the need to fund higher priority activities.	-2,483
Total Funding Change, Idaho	-26,945

Nevada

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Nevada Operations Office, is to characterize and perform corrective actions, as applicable, at inactive sites and facilities contaminated as the result of historic nuclear testing activities conducted at the Nevada Test Site, Tonopah Test Range and Nellis Air Force Range in Nevada, and eight other locations in five states: Amchitka Island in Alaska; Rulison and Rio Blanco in Colorado; Salmon in Mississippi; Central Nevada Test Area and Project Shoal in Nevada; and Gasbuggy and Gnome Coach in New Mexico. The mission at the Nevada Test Site also includes the characterization, treatment, storage, and/or disposal of radioactive low-level waste, mixed low-level waste, transuranic waste, mixed transuranic waste, hazardous legacy wastes, and wastes generated as the result of the Department's activities across the complex.

Program Goal

The Nevada Operations Office is committed to ensuring its site and activities pose no undue risk to the public and worker safety and to maintain compliance with applicable environmental and other requirements. Planned actions are designed to reduce the Department's environmental mortgage by characterizing and performing applicable corrective actions at the Nevada Test Site and associated off-site locations, enhancing strategies to safely accept and dispose of low-level waste, removing stored transuranic and mixed waste for disposition, and closing on-site disposal areas in compliance with regulatory requirements. For contaminated surface sites outside the Nevada Test Site, Nellis Air Force Range, and the Tonopah Test Range boundaries, the goal is to characterize, perform applicable corrective actions, and restore the surface areas for alternative uses. Institutional control of the subsurfaces will be retained by the Department of Energy and the groundwater is anticipated to be monitored for up to 100 years to ensure there is no risk to the public.

Program Objectives

The key objective of the Nevada Operations Office Environmental Management Program is to address the legacy of contamination resulting from 1,054 above and below-ground nuclear tests, of which 928 occurred at the Nevada Test Site. The test site will be remediated consistent with an end state which incorporates cleanup standards developed for an institutional land use scenario, with the expectation that the land will remain under the control of the government.

The environmental restoration program includes four projects. The Underground Test Area Project, which addresses subsurface contamination and groundwater protection, remains the highest priority activity within the Nevada Operations Office Environmental Management Program. The Underground Test Area Project end state is the implementation of a comprehensive groundwater model and monitoring network to assure that groundwater protection is achieved. The Soils Project addresses contamination in the surface soils from nuclear detonations and safety experiments involving chemical detonation of plutonium-bearing devices. The Industrial Sites Project addresses contamination resulting from use of test support facilities such as leach fields, muck piles, sumps, and injection wells. Decontamination and decommissioning activities, conducted as part of the Industrial Sites Project, will be completed within ten years. The Off-sites Project addresses contamination resulting from historic testing activities which occurred off the Nevada Test Site at eight sites in five states (Alaska, Colorado, Mississippi, New Mexico, and Nevada).

The waste management program will continue to characterize, segregate, and repackage the transuranic/mixed transuranic waste at the Waste Examination Facility in anticipation of shipping the waste to the Waste Isolation Pilot Plant for disposal. Transuranic waste shipments are scheduled to begin in FY 2002. The balance of the Waste Management Program addresses the treatment, storage, and/or disposal of mixed low-level and low-level wastes. Nevada will continue to accept and dispose of low-level waste from off-site and on-site generators.

Program Integration includes those activities common to all projects including quality assurance, health and safety, project planning and control, technical and regulatory support, and contractual support. Agreements-in-Principle/Grants provide funding for state oversight activities and support of Department initiatives.

To achieve one of the highest priority goals, the disposal of transuranic waste at the Waste Isolation Pilot Plant, the Nevada Operations Office plans to use the Oversize Transuranic Waste Laser-Cutting technology now being used at the Los Alamos National Laboratory. It uses an existing laser-cutting system to size-reduce glove boxes and large metal objects. This technology was selected because it provides a disposition path for oversize transuranic waste from the Nevada Test Site and other sites. Robotics and remote operation minimize worker accidents and exposure to contamination.

Significant Accomplishments and Program Shifts

- Completed installation of one additional well (FY 2000).
- Initiated remediation of surface sites at the Central Nevada Test Area in Nevada (FY 2000).
- Completed assessment of 17 release sites, and remediation of 44, Resource Conservation and Recovery Act Industrial Sites on the Nevada Test Site and Tonopah Test Range (FY 2000).
- Completed disposal of approximately 18,267 m^3 of low-level waste (FY 2000).
- Repacked 195 mixed transuranic waste drums (FY 2000).

- Close Amchitka Island mud pits in place (FY 2001).
- Continue funding to support the Nevada Environmental Research Park Program (FY 2001).
- Provide support to local community emergency response and preparedness training (FY 2001).
- Provide support for development, implementation, and maintenance of the Federal Facility Agreement and Consent Order and the Federal Facility Compliance Act and related action plans and amendments between DOE/Nevada and the State of Nevada (FY 2001).
- Complete the draft revised geologic model for Frenchman Flat (FY 2002).
- Complete the closure of Amchitka Island Surface areas (FY 2002).
- Initiate shipment of transuranic/mixed transuranic waste to the Waste Isolation Pilot Plant (FY 2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
NV202 / Agreements in Principle/Grants	7,559	5,953	4,000
NV211 / Soils	599	344	0
NV212 / Underground Test Area (UGTA)	29,880	30,982	25,813
NV214 / Industrial Sites	13,810	14,263	23,715
NV240 / Off-sites	11,002	12,421	8,000
NV350 / Transuranic Waste/Mixed Transuranic Waste	5,626	6,449	6,666
NV360 / Mixed Low-Level Waste	1,052	1,128	850
NV370 / Low-Level Waste	4,673	5,044	4,626
NV400 / Program Integration	11,195	10,619	9,173
Total, Nevada	85,396	87,203	82,843

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Nevada Test Site	74,394	74,782	74,843	61	0.1%
Nevada Operations Office	11,002	12,421	8,000	-4,421	-35.6%
Total, Nevada	85,396	87,203	82,843	-4,360	-35.5%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	44	49	8
Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	0	215
Mixed Low-Level Waste			
Treatment (m^3)	25	0	0
Disposal (m^3)	29	0	0
Low-Level Waste			
Disposal (m^3)	18,267	28,551	64,428

Site Description

Nevada Test Site

The Nevada Test Site is located 65 miles northwest of the city of Las Vegas and encompasses 1,573 square miles, an area roughly the size of Rhode Island. The activities are wide-spread, geographically diverse, and are the result of 928 historical above-ground and below-ground nuclear tests, conducted at the Nevada Test Site. In addition to surface cleanup, the regional groundwater model indicates a high potential for migration of underground contaminants toward public receptors.

The Nevada Test Site mission also includes safe storage and disposal of low-level radioactive wastes generated by Department of Energy activities throughout the complex. Storage of transuranic waste and disposal of low-level waste, the low-level wastes that are received from the on-site and off-site generators, are conducted according to the current Nevada Test Site Environmental Impact Statement Record of Decision and other regulatory requirements. Only 16 currently approved generators are permitted to dispose of waste at the Nevada Test Site.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Nevada Operations Office Environmental Management Program is managed through a performance-based management and operating contract for Nevada Test Site activities, administered by the landlord (National Nuclear Security Administration) and a cost-plus incentive fee architect-engineer Environmental Management services contract to assure the most cost efficient service to the Government. All supporting subcontracts are subject to an internal "make/buy" review process and have a fixed cost ceiling, requirements for safety and health, well-developed performance criteria, and specific quality standards. The scope planned for FY 2002 has been reviewed by both DOE/Nevada Operations Office and DOE/Headquarters and developed with input from the Nevada Division of Environmental Protection and stakeholder groups and is appropriate to meet the goals of the site as outlined in the EM sites' baseline planning data.

Cost estimating, project planning and baseline methods, and project scope for the Environmental Restoration Program were independently validated by the Army Corps of Engineers and the Department of Energy's Core Technical Group in 1997. The Department of Energy's Core Technical Group completed similar activities for the waste management program in 1998. These validations include 100 percent of the projects described in this section, and the funds requested for FY 2002 are appropriate to perform the activities based on cost estimates developed using both historic costs for conducting similar activities and typical unit and time and materials costs found in private industry.

NV202 / Agreements in Principle/Grants 7,559 5,953 4,000

This project provides limited support for grants and various agreements with states where the Department of Energy - Nevada Operations Office's environmental management activities are occurring or are scheduled as the result of previous historical testing activities. Funding supports regulator oversight of the Nevada Operations Office activities within the states including surveillance and monitoring activities, and supports the outreach program, which includes community involvement mechanisms, educational endeavors, and various research and development projects. Activities include:

- # Continue funding the State of Nevada fees for oversight as directed by the Federal Facility Agreement and Consent Order.
- # Continue support of Agreements-in-Principle with Alaska, Mississippi, and Nevada for monitoring of the Nevada Operations Office assessment and characterization activities at sites for which the Nevada Operations Office is responsible.
- # Provide technical support, land access, and review of plans and permits.
- # Provide support to local community emergency response and preparedness training.
- # Continue work conducted by the Harry Reid Center for Environmental Studies and the Nevada Risk Assessment Management Program.
- # Continue to provide research opportunities for students and faculty in support of technical programs.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

NV211 / Soils 599 344 0

The Soils Project addresses contaminated surface and shallow subsurface soils at the Nevada Test Site, the Tonopah Test Range, and the Nellis Air Force Range complex. Contamination is the result of the historic Department of Energy, Nevada Operations Office aboveground and near-surface nuclear detonations, safety shot tests, rocket engine development, and hydronuclear tests. The contaminants of concern are primarily americium, plutonium, depleted uranium as well as other transuranic radionuclides and fission products. In addition, there are potential sites where metals, particularly lead, will be of concern. The Soils Project will complete characterization of all sites comprising the project, complete remediation of surface soils to negotiated levels and remediate only the hot spots located within sites identified as potential future testing zones at the Nevada Test Site. Access control will be maintained for the sites.

No activity in FY 2002 due to redirection of funding to higher priority projects.

NV212 / Underground Test Area 29,880 30,982 25,813

The Underground Test Area Project focuses on evaluating the extent of contamination to the groundwater due to past underground nuclear testing. During the 35 years of underground testing from 1957 to 1992, the Department of Energy conducted 908 nuclear detonations in shafts and tunnels on the Nevada Test Site. These detonations deposited 300 million curies of radioactivity in the subsurface under approximately 500 square miles of the Nevada Test Site. Approximately one-third of these tests were conducted near or below the water table (800-2000 feet below surface) and have contaminated the groundwater. The 908 detonations are categorized into 878 Corrective Actions Sites, which are grouped into six Corrective Action Units. These six Corrective Action Units are geographically distinct with different hydrogeologic characteristics related to each. Tritium is the contaminant of primary concern for the next 100 years because it is the most mobile. Corrective action activities are required under terms of a Federal Facility Agreement and Consent Order negotiated by the Department of Energy and the Department of Defense with the State of Nevada. This agreement outlines the approach for identifying, prioritizing, investigating, and remediating the sites.

The Underground Test Area Project consists of field work involving the drilling and testing of multiple boreholes, laboratory analysis of groundwater and rock samples, and the development of hydrologic and risk models in the Corrective Action Units. Of the budget for the project, approximately 50 percent is spent on the installation of wells, 30 percent is spent on laboratory studies, and 20 percent is spent on modeling. The installation of groundwater wells in remote desert and mountain locations at depths ranging from 800 to 5,600 feet can result in costs ranging from $1,500,000 to $4,000,000 per well. The project has established an internal advisory group consisting of experts in geology, hydrology, modeling, geochemistry, radiochemistry, engineering, and risk assessment to provide technical guidance and review of project activities. In addition, all hydrologic models are peer reviewed by an external group of national experts.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Currently it is not technically or economically feasible to remove the subsurface contamination. The goal of the Underground Test Area Project is to establish boundaries for the maximum extent of contaminant migration and to monitor the groundwater to protect the public and workers.

  < The process includes data collection, hydrologic modeling, and long-term monitoring. The first step is to collect and evaluate geologic, hydrologic, and radionuclide information for each area. This information will be used to develop a three-dimensional flow and transport model, consisting of approximately 10 to 25 hydrogeologic units, to define the contaminant boundary for each unit. The boundary will define the maximum extent of contaminant migration in the horizontal and vertical directions.

  < Pursuant to the agreement with the State of Nevada on the boundary, a groundwater-monitoring network will be established and maintained for 100 years. The project schedule through FY 2017 includes a five-year "proof of concept" period to confirm the predictive capabilities of the model. If the Department of Energy and the State of Nevada cannot reach agreement on the boundary, additional wells may be required to fill data gaps.

Key Milestones

Conduct geophysical surveys in Frenchmen Flat (September 2001).
Drill two wells in Frenchman Flat (September 2001).
Initiate Pahute Mesa Flow and Transport Modeling (October 2001).
Initiate revisions to the Frenchman Flat Model (April 2002).

NV214 / Industrial Sites 13,810 14,263 23,715

The Industrial Sites Project includes buildings, structures, equipment, and areas used in support of past nuclear testing activities. Within the Industrial Sites Project, there are approximately 487 remaining Corrective Action Sites that require some level of investigation--some Corrective Action Sites may require remediation. The Corrective Action Sites have been organized into over 72 similar groups or Corrective Action Units. The majority of the sites are located on the Nevada Test Site and some are located on the Tonopah Test Range. Site contaminants include chemicals, lead, explosives, unexploded ordnance items, and radioactive and mixed waste. The Project will complete characterization and required remedial actions and implement required monitoring activities at all sites.

Complete 22 release site assessments and three remedial actions.

(dollars in thousands)

FY 2000	FY 2001	FY 2002
Metrics		
Release Site		
Cleanups	44	15	3
Key Milestones		
# Complete Corrective Action Unit 321 Closure Report (April 2001).		
# Complete Corrective Action Unit 407 Closure Report (April 2001).		
# Complete Corrective Action Unit 135 Closure Report (April 2001).		
# Complete Corrective Action Unit 486 Closure Report (April 2001).		
# Complete Corrective Action Unit 490 Corrective Action Decision Document (July 2001).		
# Complete Corrective Action Unit 428 Closure Report (July 2001).		
# Complete Corrective Action Unit 240 Closure Report (July 2001).		
# Complete Corrective Action Unit 110 Closure Report (August 2001).		
# Complete Corrective Action Unit 261 Closure Report (August 2001).		
# Complete Corrective Action Unit 409 Corrective Action Decision Document (September 2001).		
# Complete Corrective Action Unit 230 Closure Report (September 2001).		
# Complete Corrective Action Unit 320 Closure Report (September 2001).		
# Complete Corrective Action Unit 262 Corrective Action Decision Document (September 2001).		
# Complete Corrective Action Unit 487 Corrective Action Decision Documents (January 2002).		
# Complete Corrective Action Unit 143 Closure Report (April 2002).		
# Complete Corrective Action Unit 405 Corrective action Decision Documents (April 2002).		
# Complete Corrective Action Unit 271 Corrective Action Decision Documents (September 2002).		

NV240 / Off-Sites 11,002 12,421 8,000

In addition to the Nevada Test Site, underground nuclear testing activities have been conducted at eight locations in five different states as part of the Nuclear Weapons Testing, the Vela Uniform, and the Plowshare Programs. Characterization of both the surface and subsurface environment will be conducted in order to minimize risk to the public and environment.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

If necessary, remediation activities will be conducted to allow release of the surface areas for alternative use. Subsurface areas will be modeled and monitored. Subsurface restrictions will remain in effect to prohibit access to radioactive contamination, and groundwater is assumed to be monitored for a period of 100 years to ensure lack of access to contaminated groundwater.

Corrective actions at off-site locations within the State of Nevada are required under terms of an agreement negotiated with the state regulator. Parameters of corrective activities are identified within the Corrective Action strategy appendix to the agreement. Corrective measures are not established with the other four States, but are expected to parallel those established for the off-site locations within the State of Nevada. Cleanup levels required at each site will be negotiated with individual host states.

- # Complete the Closure Report for Amchitka Island Surface Areas.
- # Complete the Closure Report for the Salmon Site Subsurface.
- # Complete a total of five release sites.

Metrics			
Release Site			
Cleanups	0	34	5
Key Milestones			
# Complete Central Nevada Test Area (Corrective Action Unit 417) closure report (August 2001).			
# Close Amchitka mud pits in place (September 2001).			
# Complete Corrective Action Plan (Proposed Plan) for Amchitka Island Surface Areas (November 2001).			
# Complete Gasbuggy Field Characterization (December 2001).			
# Complete closure report for Amchitka Island Surface Areas (May 2002).			
# Plug and abandon 45 wells at Salmon Site (September 2002).			

NV350 / Transuranic Waste/Mixed Transuranic Waste 5,626 6,449 6,666

The Transuranic/Mixed Transuranic project will store, characterize, segregate, repackage, and ship declassified transuranic and mixed transuranic waste for disposal at the Waste Isolation Pilot Plant in order to meet the requirements of the Resource Conservation and Recovery Act. Additionally, the Rocky Flats waste stream stored at the Nevada Test Site must be declassified before it can be treated and shipped to the Waste Isolation Pilot Plant for disposal.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Previously disposed transuranic and mixed transuranic waste in the Greater Confinement Disposal Facility at the Nevada Test Site will be addressed in a Performance Assessment to determine the potential for future environmental and health risks. Planning, data collection, and analysis related to completion of the Performance Assessment, and subsequent permanent closure of the Greater Confinement Disposal Facility, are part of the planned activities. Based on the results of this Performance Assessment, the Department of Energy will determine whether the waste may be closed in place or otherwise managed appropriately.

Shipments of transuranic waste for disposal to the Waste Isolation Pilot Plant are scheduled to begin in FY 2002.

- # Obtain transuranic waste stream certification.
- # Ship 215 cubic meters of transuranic/mixed transuranic waste drums to the Waste Isolation Pilot Plant for disposal.
- # Receive approval of Greater Confinement Disposal/Composite Analysis Document Part B.

Metrics			
Transuranic Waste			
Shipped to Waste Isolation Pilot Plant for Disposal (m^3)	0	0	215
Key Milestones			
# Submit oversize transuranic/mixed transuranic shipping schedule to Nevada Division of Environmental Protection (April 2001).			
# Repack 240 drums of transuranic/mixed transuranic waste (September 2001).			
# Transuranic/mixed transuranic waste - storage 671 m^3 (September 2001).			
# Initiate transuranic/mixed transuranic waste shipments to the Waste Isolation Pilot Plant (January 2002).			

NV360 / Mixed Low-Level Waste 1,052 1,128 850

This project manages the Nevada Test Site's mixed low-level waste in accordance with the Nevada Test Site Federal Facilities Compliance Act, Site Treatment Plan, and Mutual Consent Agreement and to protect against potential risk to human health and the environment.

Management of mixed low-level waste includes researching treatment options, selecting preferred and alternative treatment methods, verifying that the waste meets the applicable Waste Acceptance Criteria required by treatment and disposal site(s), shipping the waste to the selected site, and tracking the waste through disposal.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The newly generated mixed low-level waste is stored temporarily as needed within the time frame negotiated with the State of Nevada pending treatment and disposal. Tracking, reporting, and coordination with the State of Nevada are accomplished by periodic meetings, annual updates, reporting of waste movement, and maintenance of database.

- # Maintain the capability to safely accept and manage Nevada generated mixed low-level waste.
- # Complete the Federal Facilities Compliance Act Site Treatment Plan Annual Update.
- # Complete Mutual Consent Agreement Treatment and Disposal Plans as required.
- # Modify the Resource Conservation and Recovery Act Part B Permit as required.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	25	0	0
Disposal (m^3)	29	0	0

Key Milestones

- # Submit final Site Treatment Plan Annual update to the State of Nevada (April 2001).
- # Submit Resource Conservation and Recovery Act Part B Permit modifications/revisions to the State of Nevada (September 2001).
- # Complete two permit modifications (September 2001).
- # Complete one permit application revision (September 2001).
- # Complete two permit modifications (September 2002).
- # Complete two permit application revisions (September 2002).

NV370 / Low-Level Waste 4,673 5,044 4,626

This project operates and maintains a low-level waste disposal facility in a manner that ensures safety, efficiency, and compliance with all applicable regulations. It will accomplish cradle to grave tasks from the acceptance of low-level waste through closure of waste disposal units at the Nevada Test Site.

The major activity is the disposal of low-level waste generated at the Nevada Test Site and other Department of Energy and Department of Defense sites, at two disposal units in Areas 3 and 5. With the natural conditions of closed desert basins, low rainfall, high aridity, great depths to groundwater, and relatively slow movement of groundwater off-site, the Nevada Test Site is ideally suited for this role as the disposer of low-level waste. Primary tasking is to maintain 500,000 cubic feet of disposal capacity for low-level waste.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Supporting tasks include the on-site waste generator project, the integrated waste disposal units closure project, base operations and maintenance, technical support, routine site monitoring, maintaining performance assessments, site characterization, update the National Environmental Policy Act requirements, general plant projects, and capital equipment. The Nevada Test Site low-level waste disposal capabilities are anticipated to be needed through FY 2070 to support the remaining cleanup of radioactive waste left after 50 years of U.S. production of nuclear weapons and other related new radioactive waste generating activities.

Disposal and permanent closure of specific filled disposal units will continue through FY 2070. Long-term surveillance and maintenance of disposal units will be conducted through FY 2100.

- # Maintain adequate disposal capability at the Area 3 and Area 5 Radioactive Waste Management Sites.
- # Provide support for the Radioactive Waste Acceptance Program and maintain the Nevada Test Site waste acceptance criteria.

Metrics			
Low-Level Waste			
Disposal (m^3)	18,267	28,551	64,428
Key Milestone			
# Submit Asbestiform Low-Level Waste Disposal Annual Report to State of Nevada (March 2001).			
# Submit Area 5 Annual Groundwater Monitoring Report to State of Nevada (March 2001).			
# Maintain capability to dispose both on-site and off-site low-level waste (September 2001).			
# Submit Asbestiform Low-Level Waste Disposal Annual Report to State of Nevada (March 2002).			
# Submit Area 5 Annual Groundwater Monitoring Report to State of Nevada (March 2002).			
# Maintain capability to dispose both on-site and off-site low-level waste (September 2002).			

NV400 / Program Integration 11,195 10,619 9,173

Program Integration provides financial, professional, administrative, and crosscutting support of environmental management activities at the Nevada Test Site, Tonopah Test Range, and eight off-site locations in Alaska, Colorado, Mississippi, Nevada, and New Mexico. Overall management is most efficiently accomplished by integrating the functions that are common to all project activities. These functions include administrative support, strategic initiatives, budget formulation, project planning and control, baseline revision and maintenance, quality assurance, health and safety, and stakeholder involvement activities.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- Update the project baseline.
- Continue support of site internal project control system.
- Provide annual programmatic health and safety support, including management, surveillance, record-keeping/maintenance, training, and Environmental Management Health and Safety Project Plan maintenance.
- Provide support for development, implementation, and maintenance of the Federal Facility Agreement and Consent Order and the Federal Facility Compliance Act and related action plans and amendments between DOE/Nevada and the State of Nevada.
- Provide independent cost estimates.
- Perform project reviews and program evaluations.
- Continue support of various Department project management initiatives.

Key Milestones

- Complete upgrade to Waste Management Division baseline (February 2001).
- Update programmatic baselines (February 2001).
- Complete final Site Treatment Plan update (March 2001).
- Update the Integrated Planning, Accountability, and Budgeting System budget data (April 2001).
- Update the Integrated Planning, Accountability, and Budgeting System planning data (April 2001).

Total, Nevada	**85,396**	**87,203**	**82,843**

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
NV202 / Agreements in Principle/Grants	
# Decrease of funding reflects transfer of funds to higher priorities.	-1,953
NV211 / Soils	
# Decrease of funding reflects funds redirected to higher priority projects.	-344
NV212 / Underground Test Area	

	FY 2002 vs. FY 2001 ($000)
# Decrease in funding reflects the baseline plan, per the current corrective strategy, reflects minimal drilling for data collection purposes in FY 2002. The State regulator is now requiring renegotiation of elements of the strategy, thus the baseline will be replanned upon completion of negotiations on the strategy.	-5,169
NV214 / Industrial Sites	
# Increase of funding reflects funds to cover required corrective actions.	9,452
NV240 / Off-sites	
# Decrease of funding reflects reduction in field activities at Amchitka following surface cleanup in FY 2001 and transfer to higher priorities.	-4,421
NV350 / Transuranic Waste/Mixed Transuranic Waste	
# Increase of funding reflects increased transuranic and mixed transuranic activities.	217
NV360 / Mixed Low-Level Waste	
# Decrease of funding reflects the decreased cost of storage inspections.	-278
NV370 / Low-Level Waste	
# Decrease of funding reflects the completion of development of performance assessments and further refinement of the monitoring strategy.	-418
NV400 / Program Integration	
# Decrease of funding reflects support of higher funding priorities.	-1,446
Total Funding Change, Nevada	-4,360

Oak Ridge

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Oak Ridge Operations Office is to direct and monitor environmental restoration, waste management operations, and materials stabilization activities on the Oak Ridge Reservation in Tennessee and at several off-site properties. The legacy waste at the Oak Ridge Reservation includes 75 percent of the total Department of Energy complex low-level waste storage inventory, 61 percent of the complex-wide mixed low-level waste inventory, and 82 percent of the Department's total complex remote-handled transuranic waste inventory in storage at the three Oak Ridge sites. These large volumes, as well as all of the hazardous, sanitary, and industrial waste annually generated from mission activities, are safely stored, treated, and disposed in compliance with regulations. Spent nuclear fuel containing 0.25 metric tons of heavy metal is currently in storage at the Oak Ridge National Laboratory, awaiting transfer to the Idaho National Engineering and Environmental Laboratory and the Savannah River Site. Environmental restoration of the Oak Ridge Reservation will be conducted using a comprehensive watershed decision-making strategy. A combination of near-term removal actions and long-term remedial actions will assure that health and environmental risks are appropriately addressed. The decommissioning of buildings in Oak Ridge will be conducted as removal actions in concert with the watershed strategy. Future land use assumptions, made in collaboration with the regulators and other affected stakeholders, provide the basis for establishing protective and cost-effective cleanup levels.

Technology development and deployment initiatives address needs related to characterization, sampling, monitoring, and cleanup. A combination of emerging technologies and application of existing mature technologies are used to reduce costs for accelerated cleanup schedules. Pro-active application of innovative and alternative technologies is used to reduce cost, minimize risk and compress schedules. These include such technologies as the Scarab III Remotely Operated Sampling Vehicle, Permeable Reactive Barriers for treating contaminated groundwater, Polymer Macroencapsulation Treatment to safely handle mixed waste from decontaminating and decommissioning operations, Electro-Osmosis removal of dense non-aqueous phase liquids from low permeability soils (clays), the Houdini ^{TM} remotely operated track vehicle for tank cleaning, Heavy Weight Retrieval System for removal of sludge from tanks, Linear Scarifying End Effector for removing a contaminated layer of concrete from concrete tank walls, a Mobile Retrieval System that jet mixes waste inside a tank so that it can be pumped out of the tank, a Hurricane Nozzle to dislodge stubborn waste concentrations in tanks.

Key to achieving this mission is the implementation of project management, contracting and technology strategies. Project management activities are focused on multi-year planning and maintaining project controls to meet EM's goals for safe, cost-effective and timely site closure. Project management cost savings result, in part, from integrating multiple projects through sequencing based on programmatic focus, critical path considerations, execution logic, mortgage reduction, resource leveling and subcontracting strategy. Emphasis is placed on subcontracting the largest portion of the work to best-in-class subcontractors through competitively bid fixed-price and fixed-unit price subcontracts with performance specifications.

Program Goal

The Oak Ridge Operations Office is committed to having all spent nuclear fuel shipped to the Idaho National Engineering and Environmental Laboratory and the Savannah River Site for long-term storage; all legacy transuranic waste treated and disposed; all legacy mixed waste treated and disposed; all remedial action sites completed; all currently scheduled buildings decommissioned; and all legacy low-level waste disposed. Remedial action at the Oak Ridge Operations Offsite projects is scheduled for completion by FY 2006. Significant cost efficiencies are being realized from the Oak Ridge Reservation sub-contracting strategy and from re-prioritization of disposition for wastes that are in the way of critical path remediation activities. The Oak Ridge Operations Office is committed to ensuring its sites and activities pose no undue risk to the public and worker safety and maintain compliance with applicable environmental and other requirements. Aggressive contract management initiatives have been implemented to provide incentives for accelerating the program and to reduce cost. The management and integration contracting approach utilizes competitively bid fixed-price and fixed-unit cost contracts to reduce project costs. Additionally, resequencing the disposition of waste to avoid impact on critical path remediation has resulted in acceleration of the low-level waste program. These actions focus on managing the contract for results and place emphasis on cost control, risk management, and measuring and analyzing earned value. Using innovative approaches and "out of the box" thinking on this contract, will result in cost savings, cost avoidance, technology deployment and accelerated clean up being realized.

Program Objectives

By FY 2008, all of Oak Ridge's legacy transuranic waste will be treated and disposed, all legacy mixed waste will be treated and disposed, and 70 percent of all legacy low-level waste will be disposed. Additionally, Oak Ridge is involved in innovative technology demonstrations to identify more effective and efficient ways to treat waste. Remedial actions will be completed, including the Oak Ridge National Laboratory gunite tanks and an 85 percent reduction in the Environmental Management footprint of the Oak Ridge Reservation. These activities assume an enhanced performance efficiency, which will be achieved through the implementation of project management, contracting, and technology strategies described in the Program Mission section above.

In achieving our highest priority goals, the Oak Ridge Operations Office will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, faster, and with less cost. For instance, the Particulate Matter Continuous Emissions Monitor will be used at the Oak Ridge Toxic Substance Control Act Incinerator to enable operation through 2003 under the Maximum Achievable Control Technology compliance rule.

Significant Accomplishments and Program Shifts

- Awarded contract for the Privatized Oak Ridge Environmental Management/Waste Management Disposal Facility design completion/construction/operations (FY 2000).
- Issued Phase I Record of Decision for the Bear Creek Valley Watershed (FY 2000).
- Completed spent nuclear fuel vulnerability resolution for Solid Waste Storage Area 5N storage facilities (FY 2000).
- Completed repackaging of 26 spent nuclear fuel canisters and transferred 26 spent nuclear fuel canisters and the nine intact Peach Bottom fuel elements to interim storage (FY 2000).
- Reduced the Resource Conservation and Recovery Act storage facility footprint by 20 percent from end of FY 1999 (FY 2000).
- Achieved disposition of all newly generated mixed low-level waste ending a legacy of accumulation (FY 2000).
- Initiated low-level waste shipments to the DOE disposal sites (FY 2000).
- Awarded the Toxic Substances Control Act incinerator and mixed waste disposal subcontract (FY 2000).
- Issued the Record of Decision for the Privatized Transuranic Waste Treatment project (FY 2000).
- Completed planning, major equipment design, and documentation for the fuel salt removal process, which will lead to the removal and conversion of uranium (FY 2000).
- Completed remediation of the old hydrofracture facility tanks, pond and waste sludge basin in Melton Valley (FY 2000).
- Complete removal of a 2.6 kilogram uranium deposit from the auxiliary charcoal bed of the Molten Salt Reactor Experiment (FY 2001).
- Complete fabrication and testing of uranium conversion equipment at the Molten Salt Reactor Experiment at the Oak Ridge Reservation (FY 2001).
- Complete spent nuclear fuel repackaging activities (FY 2001).
- Complete retrieval and packaging of KEMA Reactor fuel from the Solid Waste Storage Area 6 (FY 2001).

- Complete transfer of repackaged spent nuclear fuel canisters to facility 7827 for interim storage and complete readiness assessment for shipment of spent nuclear fuel to the Idaho National Engineering and Environmental Laboratory (FY 2001).
- Complete removal of activated material from the Bulk Shielding Reactor pool (FY 2001).
- Achieve disposal of all newly generated low-level waste (FY 2001).
- Complete all FY 2001 Site Treatment Plan milestones at the Oak Ridge Reservation (FY 2001).
- Complete design and begin construction of the Privatized Transuranic Waste Treatment Facility (FY 2001).
- Initiate Resource Conservation Recovery Act closure for the Transportable Vitrification System (FY 2001).
- Complete construction and conduct startup activities of the on-site disposal cell for Comprehensive Environmental Response, Compensation, and Liability Act generated waste (FY 2001).
- Complete installation of innovative bioremediation treatment system to address the only area of off-site groundwater contamination at the Oak Ridge Reservation under the Y-12 East End Volatile Organic Compound Plume project (FY 2001).
- Contaminated soil (hot spot) removal and hydraulic isolation measures will be implemented at the Bear Creek Valley Boneyard/Burnyard under the first phase of the Bear Creek Valley watershed Record of Decision (FY 2001).
- Complete removal of inactive Liquid Low-Level Waste Tank W-1A and associated contaminated soil, which has been a key source of groundwater contamination in Bethel Valley (FY 2001).
- Complete waste transfer of eight aging tanks within the Gunite and Associated Tanks Project, using advanced robotic technologies. Removal of 88,000 gallons of mixed/transuranic waste sludge and 250,000 gallons of supernate, containing 63,000 curies of fission products, will significantly reduce potential worker and public health risks (FY 2001).
- Initiate remedial action (hydraulic isolation/capping) of the Solid Waste Storage Area 4 and removal of contaminated floodplain soil in the Intermediate Holding Pond Area (FY 2001).
- Small Facilities Decontamination and Decommissioning: Complete decontamination and decommissioning activities for the Shielded Transfer Tanks and Solid Waste Storage Area 4 facilities and complete recovery of the Robotics and Process Systems Division high bay (FY 2001).
- Dispose of 241 m^3 of Toxic Substance Control Act Incinerator mixed low-level waste residues (FY 2001).
- Complete removal of all legacy low-level waste from Buildings K-25/27 (FY 2001).
- Centrifuge Facility Surveillance and Maintenance - Perform annual facility inspections, consisting of a graded condition assessment survey on all surveillance and maintenance facilities and full condition assessment survey assessments of selected facilities (FY 2001).

- Maintenance of centrifuge complex facilities: start K-1225 roof replacement; start and complete K-1004L heating, ventilation, and air conditioning replacement; start and complete K-1041 roof ventilation hoods repair; start and complete K-1034A sprinkler system installation (FY 2001).
- The National Center of Excellence for Metals Recycle participated in six large projects and several smaller actions that resulted in the recycling of 11,000 tons of metal and an estimated savings of $9,900,000 (FY 2001).
- Initiate construction of Bear Creek Valley boneyard/burnyard soil excavation and capping project (FY 2002).
- Continue remedial actions of the Oak Ridge National Laboratory main plant surface impoundments removing risks posed by contaminated sediments in direct contact with groundwater adjacent to White Oak Creek (FY 2002).
- Molten Salt Reactor Experiment Decontamination and Decommissioning: Initiate conversion of uranium in the sodium flouride traps to an oxide for repackaging and storage; complete equipment installation and readiness assessment for fuel salt removal (FY 2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
OR-151 / ORR Waste Disposition Project	84,716	86,680	102,082
OR-171 / Environmental Management Waste Management Facility	3,877	5,870	9,754
OR-191 / Long-Term Contractor Liabilities - Defense	5,955	8,068	8,565
OR-211 / Y-12 Waste Operations	26,299	23,551	23,133
OR-221 / Y-12 Remedial Action	7,507	4,330	3,298
OR-241 / Y-12 Surveillance and Maintenance	5,444	6,074	6,116
OR-311 / ORNL Waste Operations - Defense	16,521	16,269	15,758
OR-321 / ORNL Remedial Action - Defense	28,273	27,754	5,706
OR-331 / ORNL Decontamination and Decommissioning - Defense	24,076	41,482	15,000
OR-341 / ORNL Surveillance and Maintenance - Defense	9,182	13,152	18,475
OR-381 / ORNL Nuclear Materials and Facilities Stabilization - Defense	3,971	0	0
OR-411 / ETTP Waste Operations - Defense	29,716	28,640	24,666
OR-441 / ETTP Surveillance and Maintenance - Defense	8,071	8,576	7,309
OR-821 / Off-site Projects - Defense	3,660	2,161	1,240
OR-891 / Directed Support - Defense	7,778	4,750	3,000
Total, Oak Ridge	265,046	277,357	244,102

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Oak Ridge Reservation	94,548	100,618	120,401	19,783	19.7%
Oak Ridge National Laboratory	82,023	98,657	54,939	-43,718	-44.3%
Oak Ridge Operations Office	7,778	4,750	3,000	-1,750	-36.8%
Oak Ridge Offsite Locations	3,660	2,161	1,240	-921	-42.6%
East Tennessee Technology Park	37,787	37,216	31,975	-5,241	-14.1%
Y-12 Plant	39,250	33,955	32,547	-1,408	-4.1%
Total, Oak Ridge	265,046	277,357	244,102	-33,255	-12.0%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	11	64	3
Facilities Decommissioning			
Cleanups	1	7	0
Mixed Low-Level Waste			
Treatment (m^3)	2,613	3,416	1,885
Disposal (m^3)	2,555	2,358	2,477
Low-Level Waste			
Disposal (m^3)	3,007	280	264

Site Description

Oak Ridge Reservation

The Oak Ridge Reservation encompasses about 37,000 acres and is comprised of three facilities: the Y-12 Plant, which was a uranium processing facility and now dismantles nuclear weapons components and serves as the nation's storehouse for special nuclear materials; the East Tennessee Technology Park, which was a uranium enrichment facility and is now being transitioned through reindustrialization; and the Oak Ridge National Laboratory, which conducts applied and basic research in energy technologies and in the physical and life sciences.

East Tennessee Technology Park

The East Tennessee Technology Park site occupies 1,500 acres adjacent to the Clinch River, some 13 miles west of Oak Ridge, Tennessee. It was originally built as an uranium enrichment facility using uranium hexafluoride for Defense Programs. The majority of the 125 major buildings on the site have been inactive since uranium enrichment production ceased in 1985. The site is being transitioned to the private sector through reindustrialization. Most Oak Ridge legacy waste is stored at the East Tennessee Technology Park and the Toxic Substances Control Act incinerator is the key operating waste treatment facility. All waste types are stored, treated, and disposed in compliance with regulations.

Oak Ridge National Laboratory

Activities carried out at the Oak Ridge National Laboratory historically have supported both the defense production operations and civilian energy research effort. This group of facilities requires cleanup resulting from a variety of research and development activities, which were supported by multiple DOE programs over a long period of time.

The Oak Ridge National Laboratory currently conducts applied and basic research in energy technologies and the physical and life sciences. Transuranic, low-level, mixed low-level, hazardous, sanitary, and industrial waste are generated from these operations.

Y-12

The Y-12 site is approximately 811 acres and is located about two miles southwest of Oak Ridge, Tennessee. The Y-12 site has 15 operable units within three areas; Chestnut Ridge, Upper East Fork Poplar Creek, and Bear Creek Valley. The types of contamination include radioactive, hazardous, and mixed wastes. The West End Treatment Facility treats organic liquid waste produced by Defense Programs. The sanitary landfills for all of the Oak Ridge Reservation operate at Y-12.

Off-site

The Off-Site Project addresses the cleanup of properties that are not located on the Oak Ridge Reservation and includes the Lower East Fork Poplar Creek, the Clinch River/Poplar Creek, the Atomic City Auto Parts Site, the Oak Ridge Tool and Engineering Site, and the David Witherspoon Sites.

Oak Ridge Operations Office

The Oak Ridge Operations Office manages, coordinates, tracks, and assists in the implementation of the Environmental Management program among the various sites. Oak Ridge is the lead site for the National Metal Recycle Program and supports crosscutting integration efforts related to the Oak Ridge sites. In addition, the Oak Ridge Operations Office manages oversight agreements with the State of Tennessee, Ohio, and Kentucky and provides funding for all off-site projects.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Oak Ridge Operations Office is managed through an incentivized Management and Integration contract, with fixed-price subcontracts, to assure the most cost efficient service to the Government.

OR-151 / ORR Waste Disposition Project 84,716 86,680 102,082

The legacy waste project consists of collection, storage and disposition of both legacy and newly-generated low-level, mixed low-level, hazardous, and transuranic waste. The critical path for legacy waste disposition began with approval of the Site Treatment Plan for mixed low-level waste and mixed transuranic waste, which has enforceable milestones for disposition. Stored legacy low-level wastes are in the footprint and thus on the critical path for certain remedial actions.

Hazardous waste is regulatory driven, and must be dispositioned within one year of generation. The Legacy Waste Project is a key element in the critical path of the overall EM Mission at Oak Ridge and is important for mortgage reduction. Continued implementation of fixed-price subcontracts will enable achievement of end-state goals. Significant increase in mixed and low-level waste disposition ($15,402,000).

- All newly generated mixed low-level waste and low-level waste will be disposed of preventing an increase in mixed low-level waste and low-level waste inventory.
- Continue legacy mixed low-level waste disposal under broad spectrum contracts.
- Increase in necessary management and integration technical support during construction of the Privatized Transuranic Waste Treatment Facility (PBS OR-364).
- Complete all FY 2002 Site Treatment Plan milestones by September 30, 2002.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	646	1,464	0
Disposal (m^3)	578	1,102	1,221
Low-Level Waste			

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
Disposal (m^3)	3,007	58	54
Key Milestones			
# Complete all FY 2001 Site Treatment Plan milestones (September 2001).			
# WM-4-Waste Consolidation - Complete PBI milestones by September 30, 2001 (September 2001).			
# Complete all FY 2002 Site treatment Plan milestones (September 2002).			

OR-171 / Environmental Management Waste Management Facility 3,877 5,870 9,754

The scope of this PBS element covers management and integration activities necessary for support of the design, construction, operation and closure of the Environmental Management Waste Management Facility. The Environmental Management Waste Management Facility is the on-site facility that will provide disposal capacity for various cleanup projects implemented across the reservation. The Environmental Management Waste Management Facility will receive up to 2 million cubic yards of waste for disposal through the life of the Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act projects. Support activities include areas such as project management oversight, technical support subcontracts, design review and approval, construction quality assurance, health and safety oversight and site investigation activities. These activities will be provided by Bechtel Jacobs Co. LLC, the Oak Ridge Office Management and Integration contractor. Additional activities to support initial startup of waste disposal operations ($3,884,000).

- # FY 2002 is the first full year of operation of the Environmental Management Waste Management Facility; capital construction costs will be reimbursed to the privatization vendor from the Defense Environmental Management Privatization appropriation.
- # Support the disposal needs of the majority of the Oak Ridge Reservation environmental restoration projects.
- # Provide annual payment to the State of Tennessee for perpetual care fund.

OR-191 / Long-Term Contractor Liabilities - Defense 5,955 8,068 8,565

Non-recurring Contractor Transition includes work activities associated with transitioning from the Management and Operating Contract, Lockheed Martin Energy Systems, Inc., to the Management and Integration contract management structure, Bethel Jacobs Company LLC.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Reduction-in-Force Costs and Post April 4, 1998, post-retirement medical benefits and long-term disability will continue to be funded in this PBS and in the Uranium Enrichment Decontamination and Decommissioning Fund account PBS OR-193.

OR-211 / Y-12 Waste Operations 26,299 23,551 23,133

Waste management operations at Y-12 include treatment, storage, and disposal activities in support of DOE missions: nuclear weapons, research and environmental clean up programs. The Y-12 plant waste treatment and disposal facilities include: West End Treatment Facility (treats nitric acid waste, nitrate waters, mixed sludge and caustic wastewater); Central Pollution Control Facility (treats concentrated acidic/caustic waste contaminated with oils, metals, and radionuclides); Groundwater Treatment Facility; three sanitary/industrial landfills; and the Uranium Chip Oxidation Facility (reduces the volume of depleted uranium).

Treat 261 cubic meters of low-level waste.

Dispose of 77 cubic meters of low-level waste and 1,110 cubic meters of mixed low-level waste at commercial facilities.

Metrics			
Low-Level Waste			
Disposal (m^3)	0	72	77
Mixed Low-Level Waste			
Disposal (m^3)	1,903	1,110	1,110
Treatment (m^3)	1,756	1,090	1,090

OR-221 / Y-12 Remedial Action 7,507 4,330 3,298

Y-12 Remedial Actions Project consists of two major watershed areas: Upper East Fork Poplar Creek and Bear Creek Valley. The Upper East Fork Poplar Creek contains the Y-12 Plant area and has extensive soil, surface water, and groundwater contamination. Primary contaminants are uranium and mercury. The initial or interim Record of Decision is slated for FY 2001. The Bear Creek Valley lies west of the main Y-12 Plant area and has been historically used for waste disposal. A variety of contaminants (primarily uranium and polychlorinated biphenyls, and heavy metals) results in soil, surface water, and groundwater contamination. A Record of Decision was issued in FY 2000. In addition to the major remedial actions, there are ongoing interim actions being taken to reduce/minimize risks. Technology development projects are being utilized, or are planned, at the Y-12 site to passively treat contaminated groundwater, provide barriers to prevent the spread of contamination and in-situ mercury treatment.

Initiate construction of the Bear Creek Valley boneyard/burnyard soil excavation and capping project.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Metrics			
Release Site			
Cleanups	2	2	0
Key Milestones			
# Upper East Fork Poplar Creek Record-of-Decision Phase 1 - Submit draft record-of-decision to regulators for review (April 2001).			

OR-241 / Y-12 Surveillance and Maintenance 5,444 6,074 6,116

The Y-12 Surveillance and Maintenance project implements routine actions to ensure sites remain in compliance with established criteria and regulations that protect human health, the environment, and DOE assets as well as to ensure that requirements of Resource Conservation and Recovery Act permits and Comprehensive Environmental Response, Compensation, and Liability Act decision documents are met. Three major activities are conducted to meet these objectives: surveillance and maintenance, environmental monitoring, and pollution prevention. Surveillance and maintenance activities are conducted throughout the Y-12 plant. In addition to specific Y-12 activities, the Water Resource Restoration Program for the Oak Ridge Reservation is included in this project. Its objectives are to provide data necessary for decision-making and effectiveness monitoring of remedial actions and to report all monitoring required by the Comprehensive Environmental Response, Compensation, and Liability Act.

- # Surveillance and Maintenance: Continue recurring assessments, surveillance, inspections, maintenance, and management activities for the Y-12 Alpha-4 building. Continue the above-listed activities plus the Resource Conservation and Recovery Act/Comprehensive Environmental Response, Compensation, and Liability Act integration for the sites and facilities within the Upper East Fork Poplar Creek and Bear Creek watersheds.
- # Groundwater monitoring: Issue annual Remediation Effectiveness Reports, issue annual Integrated Water Quality Program reports, and prepare annual Sampling and Analysis Plans.

OR-311 / ORNL Waste Operations - Defense 16,521 16,269 15,758

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Oak Ridge National Laboratory currently has 750-1,000 generating sources, resulting in a diverse array of waste streams requiring management. Waste at the Oak Ridge National Laboratory includes radioactive wastes, generated by research operations in nuclear reactors, hot cells, and radioisotope production, as well as chemical, industrial, and sanitary wastes. The Oak Ridge National Laboratory treatment and disposal facilities manage both legacy and newly generated wastes in solid, liquid, and gaseous forms, as well as all the transuranic waste generated on the Oak Ridge Reservation. The waste treatment facilities include Liquid Low-Level Waste System, Process Waste Collection System, and Off-gas Collection and Treatment System. The primary objective of these facilities is to provide safe, compliant operations in support of the Office of Science mission at the Oak Ridge National Laboratory.

Dispose 117 m^3 of low-level waste.

Metrics			
Low-Level Waste			
Disposal (m^3)	0	117	117

OR-321 / ORNL Remedial Action - Defense 28,273 27,754 5,706

The Oak Ridge National Laboratory remedial action project mission is to remediate numerous radioactive and chemically contaminated areas in Bethel and Melton Valleys. As a result of multi-disciplinary research activities conducted at the laboratory for the past 57 years, the environment became contaminated as a result of leaks, spills, and past waste disposal practices. The presence of creeks, impoundments and shallow groundwater provide a ready transport mechanism of contaminants into White Oak Creek, which flows to the Clinch River, a public drinking water source. This project includes the remediation of burial grounds, inactive tanks, pipelines, contaminated soils, sediments, impoundments, surface water, liquid seepage pits and trenches to protect human health and the environment.

Technology development projects are being utilized, or are planned, at the Oak Ridge National Laboratory to address radioactive waste storage tanks, dense non-aqueous phase liquid sources, reactive barriers and in-situ treatment of buried waste.

Continue remedial action fieldwork on the Gunite Tank Shells, and treatment and disposal of surface impoundment sediments.

Continue field work on the intermediate holding pond remediation soils and sediments subproject.

Continue hydraulic isolation/capping and grouting of pipelines at the Solid Waste Storage Area 4 Burial Ground.

Continue Bethel Valley well plugging.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Payment of $100,000 fine assessed by the State of Tennessee due to missing an FY 2000 enforcement agreement milestone at the Oak Ridge National Laboratory.

Metrics			
Release Site			
Cleanups	7	62	0
Facilities Decommissioning			
Cleanup	0	1	0

Key Milestones

Melton Valley Burial Grounds - Remedial Design Report/Remedial Action Work Plan - Submit draft to regulators for comment, D1 (May 2001).

Bethel Valley Federal Facility Agreement Inactive Tanks - Complete radioactive sludge removal at the Federal Facility Agreement inactive tanks (September 2001).

OR-331 / ORNL Decontamination and Decommissioning - Defense 24,076 41,482 15,000

This activity addresses inactive facilities at the Oak Ridge National Laboratory that are contaminated with radioactive and/or hazardous material. The above grade portion of the facilities will generally be dismantled and the contaminated waste disposed of appropriately. The loose contamination in below grade areas, if they exist in a facility, will be removed and the areas backfilled with clean material. This will prevent the release of contamination to the environment, and exposure to individuals. In some cases it will also allow and is necessary to address adjoining contaminated soil areas. Of these facilities the Integrated Process Demonstration Facility is the only facility that has been identified to be decontaminated and re-used.

Old Hydrofracture Decontamination and Decommissioning: complete decontamination and decommissioning action and submit remedial action report; complete pond and process waste sludge basin removal action work plan and removal action; initiate pond and process waste sludge basin removal action report; and submit hydrofracture well plugging and abandonment remedial design report/remedial action work plan and initiate remedial action.

Molten Salt Reactor Experiment Decontamination and Decommissioning: complete equipment installation and readiness assessment for fuel salt removal and initiate conversion of uranium captured in the sodium flouride traps to a stable oxide for storage.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Small Facilities Decontamination and Decommissioning: finalize and submit shielded transfer tanks remedial design report/removal action work plan; complete removal action, and submit remedial action report; submit Solid Waste Storage Area 4 Small Facility remedial design report/removal action work plan; complete removal action; and initiate remedial action report.
- # Metal Recovery Facility: Complete removal action.

Metrics			
Release Sites			
Cleanup	2	0	3
Facilities Decommissioning			
Cleanup	1	6	0

Key Milestones

- # OR-1 - Safe progress to Molten Salt Reactor Experiment uranium removal and stable oxide - Complete PBI milestones by September 30, 2001 (September 2001).

OR-341 / ORNL Surveillance and Maintenance - Defense 9,182 13,152 18,475

This project includes all of the remedial action sites, the surplus facilities (Decontamination and Decommissioning Surveillance and Maintenance) and the surveillance and maintenance of sites and facilities after completion of the Comprehensive Environmental Response, Compensation and Liability Act cleanup (Long-Term Surveillance and Maintenance). Also included is the Oak Ridge National Laboratory Water Quality Program. The Surveillance and Maintenance project provides an integrated surveillance and maintenance function at remedial action sites and decontamination and decommissioning facilities to ensure that they remain in compliance with the appropriate federal regulations.

Long term surveillance and maintenance is responsible for remedial action sites after remediation and for the operation and maintenance of the active remediation systems, along with sites where waste is left in place. The Water Quality Program monitors releases from remedial action and decontamination and decommissioning sites to support cleanup strategies along with monitoring ongoing Comprehensive Environmental Response, Compensation and Liability Act remediation systems for effectiveness. Non-routine maintenance are activities to further reduce risk and reduce overall mortgage (i.e., roof repair, disposition of source materials). Increase of $5,323,000 due to non-routine maintenance activities including work at the Isotopes and High Ranking Facilities and disposal of equipment and material in the 7841 storage yard.

- # Prepare sampling and analysis plan, covering environmental monitoring of groundwater, surface water, and sediment throughout the Bethel Valley and Melton Valley watersheds.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Prepare/issue annual Waste Area Group 6 Groundwater Quality Report, required by the Resource Conservation and Recovery Act.
- # Maintain 63 surplus facilities in a safe, stable and environmentally sound manner.
- # Accomplish routine surveillance and maintenance of 650 acres to ensure compliance with the Federal Facilities Agreement
- # Perform routine surveillance and maintenance of remedial action sites after remediation and operation/maintenance of active remediation systems.
- # Prepare annual surveillance and maintenance reports.

OR-381 / ORNL Nuclear Materials and Facilities Stabilization

- Defense	**3,971**	**0**	**0**

This project places surplus facilities at the Oak Ridge National Laboratory in a safe and stable condition as quickly and economically as possible. Facilities will be prepared for a period of minimal life cycle surveillance and maintenance pending eventual transfer for environmental restoration. This project also provides for the management of spent nuclear fuel on the Oak Ridge Reservation. Included in this project are 1) Spent Nuclear Fuel; 2) Isotopes Facilities Deactivation Project; 3) High Ranking Facilities Deactivation Project. The specific technical approaches will be unique to each project to allow it's safe completion.

- # In FY 2001, the Spent Nuclear Fuel Program was moved to PBS OR-331, ORNL Decontamination and Decommissioning. This action was taken to better reflect the management of the program. The Facility Stabilization Project was moved to PBS OR-341, ORNL Surveillance and Maintenance. This move reflects that deactivation has been completed on the Oak Ridge National Laboratory Isotope Facilities and the High Ranking Facilities; these facilities are now under the Oak Ridge National Laboratory Decontamination and Decommissioning Surveillance and Maintenance Subproject until it is time for them to be decommissioning and/or decontaminated.

OR-411 / ETTP Waste Operations - Defense	**29,716**	**28,640**	**24,666**

Waste Operations at the East Tennessee Technology Park consist of waste treatment facilities, including Toxic Substance Control Act Incinerator, Central Neutralization Facility, Transportable Compressed Gas Recontainerization Skid, and Transportable Vitrification System. These facilities are essential to successful accomplishment of multiple DOE programs. The Toxic Substance Control Act Incinerator treats hazardous, low-level radioactive and poly-chlorinated biphenyls contaminated wastes. The Central Neutralization Facility treats both hazardous and nonhazardous wastewater received from multiple plant sources. The Transportable Compressed Gas Recontainerization processes waste cylinders. The Transportable Vitrification System is currently shut down, with the Resource Conservation and Recovery Act closure planned in FY 2001.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Treat 795 cubic meters of mixed low-level waste.
- # Dispose of 146 cubic meters of mixed low-level waste.

Metrics			
Low-Level Waste			
Disposal (m^3)	0	33	16
Mixed Low-Level Waste			
Disposal	74	146	146
Treatment (m^3)	211	862	795

Key Milestones

- # Toxic Substances Control Act Incinerator Operations - Complete treatment of wastes for the Toxic Substances Control Act mini-test and trial burns (September 2001).

OR-441 / ETTP Surveillance and Maintenance - Defense 8,071 8,576 7,309

This project ensures adequate containment and site control at shutdown facilities waiting decommissioning or reuse to ensure the health and safety of the public, site workers, and the environment. This is accomplished through a systematic program of inspections, surveillances, instrumentation calibration and building maintenance. These activities are designed to cost effectively manage the legacy materials remaining in the facilities; ensure sufficient containment is in place for process equipment and building structures; and that classified technologies and residual material are adequately protected.

The Defense appropriation covers facilities that were not associated with the sale of commercial enrichment services. The commercial related facilities are covered under the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

- # The Centrifuge Facility Surveillance and Maintenance Program will perform annual facility inspections, consisting of a graded condition assessment survey on all surveillance and maintenance facilities and full condition assessment survey assessments of selected facilities.
- # Provide optimum annual level of services to maintain infrastructure facilities for reuse or decontamination and decommissioning.
- # Effectively support DOE and the Community Reuse Organization of East Tennessee Reindustrialization Program efforts.
- # Repairs, improvements and upgrades as necessary to ensure the present and long-term viability of the East Tennessee Technology Park will be performed.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

OR-821 / Off-site Projects - Defense 3,660 2,161 1,240

The Offsite Projects are privately owned properties that were contaminated due to the sale of contaminated materials from the Oak Ridge Reservation to private property owners. The Department of Energy is responsible for the cleanup of these sites under the Tennessee Superfund law. The primary contaminants at these sites are uranium, polychlorinated biphenyls, and heavy metals. The remedial actions at these sites will consist of removing and managing (treatment and/or disposal) contaminated materials, equipment, soil, and sediment as well as the appropriate groundwater actions.

Complete the assessments for two David Witherspoon 901 Sites (901 and 1630).

OR-891 / Directed Support - Defense 7,778 4,750 3,000

This activity provides support to DOE/Oak Ridge Operations in closing out old obligations incurred by the former management and operation contractor and litigation activities.

Continue management support of the Oak Ridge Operations Office.

Continue closeout of the Lockheed Martin Energy Systems contract.

Continue closing subcontracts, supporting litigation activities, etc.

Total, Oak Ridge 265,046 277,357 244,102

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
OR-151 / ORR Waste Disposition Project	
# Increase in funding reflects a significant increase in mixed and low-level waste disposition, and increase in necessary management and integration technical support during construction of the Transuranic Treatment facility..	15,402
OR-171 / Environmental Management Waste Management Facility	
# Increase in funding reflects additional activities to support initial startup of waste disposal operations under the fixed-price, performance based contract with the Waste Management Federal Services, Inc..	3,884

	FY 2002 vs. FY 2001 ($000)
OR-191 / Long-Term Contractor Liabilities - Defense	
# Increase in funding reflects an increase in medical benefits due to recent retirements of transitioned workers.	497
OR-211 / Y-12 Waste Operations	
# Decrease in funding reflects support of higher priority activities.	-418
OR-221 / Y-12 Remedial Action	
# Decrease in funding reflects support of higher priority activities.	-1,032
OR-241 / Y-12 Surveillance and Maintenance	
# No significant change.	42
OR-311 / ORNL Waste Operations	
# Decrease in funding reflects support of higher priority activities.	-511
OR-321 / ORNL Remedial Action	
# Decrease in funding reflects the completion of significant early actions at the Oak Ridge National Laboratory and deferring post-record of decision remedial actions in Melton Valley to outyears in support of higher priority activities.	-22,048

	FY 2002 vs. FY 2001 ($000)
OR-331 / ORNL Decontamination and Decommissioning	
# Decrease in funding reflects the completion of the Bethel Valley Metal Recovery Facility decontamination and decommissioning in FY 2001and deferral of activities to support higher priority activities.	-26,482
OR-341 / ORNL Surveillance and Maintenance	
# Increase in funding reflects funding of non-routine maintenance activities including work at the Isotopes and High Ranking Facilities and disposal of equipment and material in the 7841 Storage Yard.	5,323
OR-411 / ETTP Waste Operations	
# Decrease in funding reflects savings from subcontracting and completion in FY 2001 of the Toxic Substance Control Act Incinerator trial burn and the Resource Conservation and Recovery Act closure of the Transportable Vitrification system.	-3,974
OR–441 / ETTP Surveillance and Maintenance	
# Decrease in funding reflects the completion of a utilities reconfiguration project in FY 2001, and a reduced requirement for maintenance related capital improvements and reduced support to the Reindustrialization Program in FY 2002.	-1,267
OR-821 / Off-site Projects	
# Decrease in funding reflects support of higher priority activities.	-921
OR-891 / Directed Support	
# Decrease in funding reflects support of higher priority activities.	-1,750
Total Funding Change, Oak Ridge	-33,255

Oakland

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, managed through the Oakland Operations Office, is to plan and implement remediation and waste treatment, storage, and disposal activities at three sites, two in California and one in New York. The sites are the Lawrence Livermore National Laboratory, consisting of the Livermore Site and Site 300, and the Separations Process Research Unit at the Knolls Atomic Power Laboratory in Schenectady, New York. Other DOE programs such as Defense Programs, Science, and Nuclear Energy's Naval Reactor Program continue to have operating facilities at these sites. Also, the Oakland Operations Office is responsible for program management, contracts in support of multiple sites, and the administration of State and educational grants.

Program Goal

Environmental Management's programmatic goals are to ensure operating facilities and contaminated sites pose no undue risk to the public, worker health and safety; maintain compliance with applicable environmental laws; and manage risks associated with current and prior DOE operations.

Program Objectives

The program objective is to: assess, remediate, decontaminate and decommission contaminated sites and facilities; characterize, treat, minimize, store, and dispose of hazardous and radioactive waste; and develop, demonstrate, test and evaluate new cleanup technologies. These program activities use an integrated approach to assess work and meet schedules; while also balancing risk, mortgage reduction, compliance, cost efficiencies, stakeholder input and implementation of enhanced performance mechanisms. At Lawrence Livermore National Laboratory all legacy waste will be characterized and shipped off-site. Long-term surveillance and maintenance of implemented remedial actions (e.g., pump and treat facilities) will be assumed by the landlord programs or included in a long-term surveillance and maintenance project. The Separations Process Research Unit will be cleaned up and all legacy waste will be characterized and shipped off-site.

The Oakland Operations Office has identified several innovative technologies to be evaluated and used for cleanup at the Lawrence Livermore National Laboratory. For example, field demonstrations using innovative technologies, such as in situ hydrous pyrolysis, Electrical Resistance Tomography, and biofiltration as scheduled at the Lawrence Livermore National Laboratory, Livermore Site. Electro-osmosis is being used as an initial remedial innovative technology to remove volatile organic compounds from the Lawrence Livermore National Laboratory, Livermore Site in addition to the traditional pump and treat. At the Lawrence Livermore National Laboratory Site 300, a passive iron filings wall was installed to intercept contaminated groundwater using the experience gained at another DOE site (Kansas City). Additional innovative technologies tested at the Lawrence Livermore National Laboratory Site 300 included the use of surfactant injection to help mobilize contaminants, ultra violet radiation and an electron accelerator to treat contaminated soil vapor, and enhanced in-situ bioremediation. Containerized wetlands carbon exchange resins are currently being tested for long-term application.

Significant Accomplishments and Program Shifts

- Continue operation and maintenance of 25 groundwater and 2 soil vapor treatment facilities; continue use of electro-osmosis technology at multiple source areas by using a commercial partner; begin operation of Treatment Facility E-West mini Portable Treatment Unit Treatment Facility 5475 Catalytic Dehalogenation Unit (Phase 3) for operation at the Lawrence Livermore National Laboratory, Livermore Site (FY 2001).
- Continue operation and maintenance of ten groundwater and three soil vapor extraction treatment systems, prepare and submit site-wide Final Interim Record of Decision to regulators, complete characterization field work for Building 854; prepare for Building 834 Draft Remedial Design report and site-wide Draft Final Design Work Plan at the Lawrence Livermore National Laboratory Site 300 (FY 2001).
- Continue storage, treatment, and some off-site disposal of low-level, mixed low-level, and transuranic waste at the Lawrence Livermore National Laboratory (FY 2001).
- Begin pilot scale processing of DOE waste at a commercial facility (FY 2001).
- Prepare Community Relation Plan and the Resource Conservation and Recovery Act Facility Investigation Work Plan for the Separation Process Research Unit (FY 2001).
- Conduct reporting, tracking, and waste minimization program activities required by the Resource Conservation and Recovery Act at the Department of Energy sites that generate, treat, or store hazardous/mixed wastes (FY 2001).
- Continue operation and maintenance of 27 groundwater treatment and 2 soil vapor extraction facilities; plan for operation of one new facility; begin operation of treatment Facility D northwest pipeline and implement five year review process at the Lawrence Livermore National Laboratory, Livermore Site (FY 2002).

- # Continue operation and maintenance of existing groundwater and soil vapor extraction treatment systems, prepare and submit several Federal Facility Agreement milestone documents to regulators, and prepare a final Five-Year Review report on the effectiveness of the selected remedial alternative at the General Services Area Operable Unit 1 (FY 2002).
- # Continue storage, treatment, and off-site disposal of low-level, mixed low-level, and transuranic waste at the Lawrence Livermore National Laboratory (FY 2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
OK-001 / Lawrence Livermore National Laboratory Main Site Remediation	10,470	10,649	3,300
OK-002 / Lawrence Livermore National Laboratory Site 300 Remedial Action	10,001	11,079	8,000
OK-021 / Lawrence Livermore National Laboratory Base Program	19,640	21,829	20,686
OK-026 / Lawrence Livermore National Laboratory General Plant Projects	209	15	331
OK-040-D / Program Management and State Grants (Defense)	783	350	400
OK-041 / Accelerated Waste Treatment and Environmental Technologies	1,022	485	819
OK-043 / Separations Process Research Unit	919	3,090	1,000
Total, Oakland	43,044	47,497	34,536

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Lawrence Livermore National Laboratory (CA)	40,320	43,572	32,317	-11,255	-25.8%
Oakland Operations Office	1,805	835	1,219	384	46.0%
Separations Process Research Unit	919	3,090	1,000	-2,090	-67.6%
Total, Oakland	43,044	47,497	34,536	-12,961	-27.3%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site Cleanups	7	19	2
Mixed Low-Level Waste			

Treatment (m^3)	257	127	25
Disposal (m^3)	240	127	25
Low-Level Waste			
Disposal (m^3)	164	0	0

Site Description

Lawrence Livermore National Laboratory

The Lawrence Livermore National Laboratory is a multi-disciplinary research and development laboratory focused on national defense, which has two geographic locations in northern California. The Livermore Site is approximately one square mile and is located 40 miles east of San Francisco, near the City of Livermore. Site 300 is comprised of about 11 square miles and is located 15 miles southeast of the Livermore Site. Both the Livermore Site and Site 300 are on the Environmental Protection Agency's National Priorities List. Environmental Restoration activities at the Lawrence Livermore National Laboratory are focused on identifying contaminated groundwater and soil from past operations and implementing appropriate cleanup actions. The environmental restoration activities at the Lawrence Livermore National Laboratory are divided into nine Operable Units, one at the Livermore Site, eight at Site 300, with a total of 193 release sites. Waste management activities are directed at compliant storage, treatment, and off-site shipment for disposal of both legacy and currently generated hazardous and radioactive waste. Completion of the Decontamination and Waste Treatment Facility construction in FY 2001 will provide new, centralized, and integrated facilities for the treatment of all Lawrence Livermore National Laboratory waste.

Separations Process Research Unit

The Separations Process Research Unit located in Schenectady, New York is an inactive complex that requires facility decontamination and decommissioning and cleanup. To date, no decontamination and decommissioning has been performed and the facilities have been placed in safe shutdown with the Office of Naval Reactor Program maintaining landlord responsibilities. Environmental Management signed a contract in FY 2000 to begin characterization activities.

Oakland Operations Office

Based on an Oakland Operations Office and State of California developed statement of work, the Oakland Operations Office awards and manages grants provided to the State for oversight activities which include, participation in scoping meetings, review of documents, and involvement with the public. The Oakland Operations Office also provides funds and grants to support various activities, such as tribal colleges and universities, independent reviews, and Hispanic scholarships. In addition, the operations office is responsible for

the management and funding of contracts that provide the multiple-sites with overall: program management support; waste management treatment and disposal; and technological support to accelerate program mission and completion.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Lawrence Livermore National Laboratory Livermore Site and Site 300 are managed through a performance based management and operating contract with the University of California to assure the most cost-effective services to the government. The scope planned for cleanup activities in FY 2002 has been reviewed and is appropriate to meet the goals of the site as outlined in the EM sites' baseline planning data. These activities have had an independent cost review of the scope by the Corps of Engineers and the funds requested for FY 2002 are appropriate to perform the activities based on historical level of effort costs.

OK-001 / Lawrence Livermore National Laboratory Main Site Remediation 10,470 10,649 3,300

The mission of this project is to identify existing contamination from past operations, control contaminated groundwater migration, and effectively remediate soil and groundwater where contaminants exceed regulatory limits at the Livermore Site. This project consists of one operable unit and 120 release sites.

- # Continue containment, mass removal, plume control, and pull back, with the operation and maintenance of four fixed and 21 portable groundwater treatment and 2 soil vapor extraction systems.
- # Continue operating electro-osmosis system for contaminated source removal at Treatment Facility D.
- # Prepare and issue five year review plan to regulators.
- # Supports essential activities related to the site groundwater monitoring/well maintenance such as: sampling monitoring wells; laboratory sample analysis; and data tracking and reporting.

Metrics			
Release Sites			
Cleanup	2	17	0

Key Milestones

- # Begin operation of Treatment Facility-E Southeast Mini Portable Treatment Unit (March 2001).
- # Begin operation of Treatment Facility - 5475 CRD (phase 3) (September 2001).
- # Issue five-year review (September 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

OK-002 / Lawrence Livermore National Laboratory Site 300 Remedial Action 10,001 11,079 8,000

The Site 300 Remedial Action project will identify existing contamination from past operations, control contaminated ground water migration, and effectively remediate soil and ground water where contaminants exceed regulatory limits to protect human health, the environment, and beneficial uses of natural resources by conducting cost-effective, science-based, state-of-the-art environmental restoration. This project consists of eight operable units and seventy-three release sites.

- # Continue operation and maintenance of groundwater and soil vapor extraction treatment systems.
- # Complete General Services Area Five-Year Review process.
- # Prepare and submit the following reports to regulators (compliance agreement milestones): Site-wide Final Remedial Design Work Plan; Final General Services Area record of decisions Five-Year Review; Building 834 and Building 832 Final Remedial Design Reports; and Site-Wide Final Compliance Monitoring Plan and Contingency Plan.
- # Initiate feasibility study for the Pit 7 Complex.

Metrics			
Release Sites			
Cleanup	5	2	2
Key Milestones			
# Site Wide (Operable Unit 8) Final Interim Record of Decision (April 2001).			
# Site Wide (Operable Unit 8) Draft Remedial Design Work Plan (May 2001).			
# Site Wide (Operable Unit 8) Draft Final Remedial Design Work Plan (September 2001).			

OK-021 / Lawrence Livermore National Laboratory Base Program 19,640 21,829 20,686

This project will formulate a centralized waste management program at Lawrence Livermore National Laboratory to ensure waste handling practices from the generating source through final disposition are consistent to ensure safe and compliant operations at the treatment, storage and disposal facilities. Waste types managed under this project include low-level waste, mixed low-level waste, transuranic waste, mixed transuranic waste and hazardous waste, and includes treatment and disposal at the Department of Energy commercial facilities.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Ensure safe and compliant operations to receive, store, treat, and dispose of Lawrence Livermore National Laboratory generated wastes.
- # Complete Operational Readiness Review and Transition into Decontamination and Waste Treatment Facility.
- # Prepare safety analysis documents for high curie waste storage facility.
- # Prepare closure documentation of Area 514 Facility and three units within Area 612.
- # Continue commercial disposition of mixed low-level/low-level waste to reduce long-term storage costs.
- # Maximize disposition of legacy waste inventory.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	257	127	25
Disposal (m^3)	240	127	25
Low-Level Waste			
Disposal (m^3)	164	0	0

OK-026 / Lawrence Livermore National Laboratory General Plant Projects **209** **15** **331**

General Plant Projects supports waste management operations to provide small capital improvements to property, purchase new/improved technology equipment, perform coded compliance updates, and/or upgrade existing buildings and utilities to meet current or new regulations and requirements.

- # Construct trailers and install utilities to relocate personnel closer to the new Decontamination Waste Treatment Facility.

OK-040-D / Program Management and State Grants (Defense) **783** **350** **400**

The purpose of the project is to provide funding to support grants for State regulatory agencies who have oversight of the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act programs for DOE. A Memorandum of Agreement between the Department and Indian Nations allows for grants to support tribal universities and colleges. This project also supports the Oakland program management and integrated waste treatment and disposal contracts.

- # Award funds to the Department of Toxic Substance Control and to the San Francisco Regional Water Quality Control Board for the Lawrence Livermore National Laboratory Main Site.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Award funds to the Central Valley Regional Water Quality Control Board for the Lawrence Livermore National Laboratory Site 300 grant.
- # Continue to process integrated cost-saving support and waste treatment and disposal contracts.

OK-041 / Accelerated Waste Treatment and Environmental Technologies 1,022 485 819

Activities in this project are to develop advanced technologies for both waste treatment and environmental restoration. Currently, the major activity involves the Lawrence Livermore National Laboratory developed Molten Salt Oxidation Technology being commercialized by a waste treatment firm to treat DOE mixed low-level waste. Previously funded technologies as well as new technologies are always being evaluated for their potential and possible application and funding under this project.

- # Complete upgrades to increase treatment capacity of the Molten Salt Oxidation system.
- # Begin processing of 1,500 gallons of DOE mixed waste using upgraded Molten Salt Oxidation system.
- # Initiate application for Resource Conservation and Recovery Act Part B permit modification.

OK-043 / Separations Process Research Unit 919 3,090 1,000

This project funds activities to remove radiological and chemical contamination from the Separations Process Research Unit portion of the Knolls Atomic Power Laboratory.

- # Continue preparing the plans, reports/documents, and obtain the necessary permits for executing Phase I characterization activities.
- # Continue the Resource Conservation and Recovery Act Facility assessment activities.
- # Continue Characterization (radiological and chemical) activities.
- # Continue waste management activities.

Key Milestones

- # Issue draft Separations Process Research Unit project phase I baseline document to DOE for review and comment (February 2001).
- # Issue draft Outside Area Characterization Plan to DOE for review and comment (March 2001).
- # Issue draft Inside Area Characterization Plan to DOE for review and comment (March 2001).

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
# Submit draft Resource Conservation and Recovery Act Facility Assessment Sampling Visit Report to DOE/Knolls Atomic Power Laboratory within 60 days of data validation (May 2001).			
Total, Oakland	**43,044**	**47,497**	**34,536**

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
OK-001 / Lawrence Livermore National Laboratory Main Site Remediation	
# Decrease in funding due to completion of installation of several groundwater treatment systems.	-7,349
OK-002 / Lawrence Livermore National Laboratory Site 300 Remedial Action	
# Decrease in funding due to completion of characterization phases for majority of operable units.	-3,079
OK-021 / Lawrence Livermore National Laboratory Base Program	
# Decrease in funding due to reduced waste disposal costs.	-1,143
OK-026 / Lawrence Livermore National Laboratory General Plant Projects	
# Activities for FY 2001 canceled and funds were transferred to other Oakland Defense funded projects. The FY 2002 funding is needed to consolidate operations from multiple locations to improve Hazardous Waste Management Operations.	316
OK-040-D / Program Management and State Grants (Defense)	
# Based on prior year actuals, slight increase needed to pay for grants and contracts.	50
OK-041 / Accelerated Waste Treatment and Environmental Technologies	
# Slight increase is due to funds required to ensure Resource Conservation and Recovery research development and demonstration permit acquisition and the initiation of construction of the expanded Molten Salt Oxidation System.	334
OK-043 / Separations Process Research Unit	
# Decrease in funding due to reduced levels of characterization activities.	-2,090
Total Funding Change, Oakland	-12,961

Hanford Site - Richland Operations Office

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, is the treatment, storage, and disposal of the legacy wastes and materials, and the decontamination and decommissioning of facilities associated with the production of nuclear materials during the Cold War. This program will carry out its mission in a manner which provides for the health and safety of its workers and the general public, and is protective of the environment.

Over the past year, the Department of Energy, Richland Operations Office has formulated an expansive outcome based vision of the Hanford's Site's future that embraces priorities of regulators, stakeholders, and area Tribal Nations, while recognizing the need to make visible progress sooner, rather than later. The three elements of that vision are: 1) to restore the Columbia River corridor; 2) complete the transition of the 200 Area on the Central Plateau to long-term waste management; and 3) prepare the remainder of the site to contribute to the future welfare and well-being of its neighboring communities.

This focus on outcomes will require changes in contracting strategy and restructuring of work to more effectively align Richland and its contractors to an outcome driven approach for planning and implementing cleanup work. A key element for executing these changes is to significantly revise the current Hanford Project Baseline Summary (PBS) structure. These changes would become effective beginning in FY 2002.

The current Richland PBS structure is based on functional/organizational units generally aligned to former DOE Environmental Management Headquarters office alignment. This structure was not outcome focused, and often required elements of multiple PBSs and multiple prime contractors to achieve cleanup of a specific site geographic area. Progress toward cleanup was difficult to demonstrate because many of the PBSs only addressed a portion of the overall cleanup requirements. For example, there were separate PBSs for facility deactivation, decontamination and decommissioning, waste site remediation and groundwater remediation that all effected the outcome of one or several facilities.

The revised Richland PBS structure can be directly aligned to a new site contracting strategy for cleanup. Key highlights of the revised structure include:

- A focus on the completion of projects. This allows the total project life-cycle to be planned and executed in a logical manner, capturing work in a continuous integrated fashion. Cleanup projects will be grouped by geographic area, and expected outcomes will be supported by required crosscutting infrastructure and integrating services. This provides a structure that enables a clearer demonstration of progress and offers a better communication of results.

- Improved alignment of workscope. A single contractor can be assigned responsibility for achieving a required cleanup end point, and the structure can be used to more effectively identity specific contract deliverables. Costly and time-consuming facility hand-offs, such as those from a deactivation firm to an environmental restoration contractor, would be eliminated. This will also eliminate the need to update and/or change requirements solely based on the transition of work scope between contractors.
- Under the new contracting strategy, one contractor will be responsible for the River Corridor cleanup, and another contractor will be responsible for the Central Plateau transition and completion of the Spent Nuclear Fuel project.

Successful cleanup of the River Corridor will allow more than 500 square kilometers (200 square miles) of Hanford land to be made available for other uses; provide opportunities for public access to key recreational areas; protect cultural resources; and shrink the footprint for active Hanford cleanup operations to approximately 200 square kilometers (75 square miles), the Central Plateau. The Department is transitioning the Central Plateau from primarily inactive storage to active waste treatment, storage, and disposal operations. New, state-of-the-art, environmentally compliant facilities will be used to support completion of the Hanford cleanup, as well as foster the DOE Office of River Protection tank waste mission. Some of these Central Plateau facilities, including the Canister Storage Building and Waste Receiving and Processing Facility, have already begun operation.

The Department of Energy is in the process of planning a closure-type contract for the River Corridor. The Department is pursuing an aggressive approach whereby a significant amount of cleanup could be completed by 2012. Our strategy for restoring the Columbia River Corridor is to expedite the work associated with remediating sources of radiological and chemical contamination. The “end point” might be as follow:

- Make 75 kilometers (45 miles) of riverfront and 550 square kilometers (215 square miles) of site land available for limited alternate uses;
- Place eight production reactors in interim safe storage (except N Reactor);
- Convert B Reactor into a museum;
- Place all 323 surplus facilities in the River Corridor Decontamination and Decommissioning Program;
- Remediate all 554 accessible waste sites (except 618-10 and 618-11 burial grounds); and
- Implement groundwater remedies.

In December 2000, DOE extended the Fluor Hanford contract through FY 2006 for work in the Central Plateau and the Spent Nuclear Fuel project. High priority activities include:

- Complete Spent Nuclear Fuel Project by FY 2006;
- Complete plutonium stabilization by FY 2004, and accelerate deactivation of the Plutonium Finishing Plant;
- Continue mixed low-level waste treatment, retrieval of buried transuranic wastes, and preparation for shipment of transuranic waste to the Waste Isolation Pilot Plant in New Mexico; and

Optimize landlord and site services to support cleanup mission.

Program Goal

The program goal is to protect the public and the environment from radioactive and hazardous contamination. This program addresses the risks associated with the Richland strategic mission outcomes: 1) cleanup of soil contamination along the Columbia River for safe disposal in the central area of the site; 2) decontamination and decommissioning of surface facilities; and 3) monitoring, mitigation, and remediation of chemical and radioactive contaminants that have migrated into the vadose zone and groundwater beneath the site. The efforts described above are governed by the Hanford Federal Facility Agreement and Consent Order, commonly referred to as the Tri-Party Agreement, which was negotiated among the Department of Energy, State of Washington, and the Environmental Protection Agency.

The contaminated soil and buildings will be cleaned up to levels reflective of anticipated use and/or to cleanup specifications as prescribed by the Comprehensive Environmental Response, Compensation, and Liability Act/Resource Conservation and Recovery Act decisions. Remediation waste will be disposed of in the on-site Environmental Restoration Disposal Facility. Hanford currently has over 1,500 release sites awaiting remediation and over 770 buildings and facilities awaiting decommissioning. Remediation actions will protect the Columbia River and near shore environment, reduce contamination entering the groundwater, and control the migration of plumes that threaten groundwater quality.

Program Objectives

The near-term program objective is to continue decontamination and decommissioning of surplus facilities, including interim safe storage and final disposition of the 100 Area reactors, consistent with the river corridor outcome. Contaminated material will continue to be excavated and disposed in the Environmental Restoration Disposal Facility. The program will develop and implement a science and technology roadmap for the Groundwater/Vadose Zone Integration Project to support site assessment and remediation, and system assessment capability development.

In achieving our highest priority goals, the Richland Operations Office will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, faster, and with less cost. For example, innovative solutions are being pursued to address the contamination in the vadose zone. Also, the Richland Operations Office is deploying new and improved decontamination and decontamination technologies as part of the F-Reactor Fuel Storage Basin Cleanup Project. A remotely controlled excavation system is being developed for use at Hanford that will reduce human resource requirements and exposure risks by 75 percent in pit operations.

Significant Accomplishments and Program Shifts

- Continued the Hanford decontamination and decommissioning project to reduce mortgages and environmental risks; protected the Columbia River, and complied with the Tri-Party Agreement. Work continued on the 233-S and 233-SA buildings; initiated characterization of the 224B facility; continued safety surveillance and maintenance of inactive facilities in the 200 Area, including treatment, storage, and disposal units; continued radiation area remedial action activities; completed selective stabilization activities; continued groundwater pump and treat; and continued implementation of Canyon Disposition Initiative (FY 2000/RL-CP01).
- Continue decommissioning work on Building 233-S; continue safety surveillance and maintenance of inactive facilities in the 200 Area, including treatment, storage, and disposal units; continue radiation area remedial action activities; complete selective stabilization activities; perform annual updates to safety analysis reports; and continue characterization of Tank 5-B for the Canyon Disposition Initiative (FY 2001/RL-CP01).
- Waste site remediation progressed at the 100 B/C, 100 DR, and 100 HR Area; initiated remediation at 100 NR and FR; Completed 42 waste sites; removed 362,631 tons of contaminated soil to the Environmental Restoration Disposal Facility; completed engineering at the D and H Reactors; completed 80 percent of Interim Safe Storage activities at the D-Reactor; completed 75 percent of Interim Safe Storage at the F-Reactor; initiated F-Reactor fuel storage basin demolition; removed legacy wastes from KE/KW and H Reactors; stabilized 183-KE/KW acid tanks; deactivated 183-N water plant; continued pump and treat at 100-HR, 100-KR-4, and 100-NR-2, 200 UP-1, and 200 ZP-1; installed 16 wells as part of the In Situ Redox Manipulation Project; constructed an evaporation pond; and conducted chemical injection of 10 wells (FY 2000/RL-RC01).
- Complete excavation at 12 waste sites; backfill 20 sites and initiate excavation at 3 sites; complete remedial design for 11 burial grounds; continue pump and treat operations; continue decontamination and decommissioning activities at F, D, DR and H Reactors; continue construction of In Situ Redox Manipulation Project barrier and associated chemical injection; continue engineering support of safe storage enclosure preparation; complete B Reactor Surveillance and Maintenance Plan; and continue surveillance and maintenance activities (FY 2001/RL-RC01).
- Conducted surveillance and maintenance program to assure minimum safe conditions for the 308 and 308A Buildings, and completed remediation of 11 waste sites, excavated 153,000 tons of soil, and sent soils to the Environmental Restoration Disposal Facility (FY 2000/RL-RC02).
- Continue surveillance and maintenance program to assure minimum safe conditions for deactivated 300 Area facilities; regrade, backfill, and revegetate eight waste sites; and initiate disposition uranium metal/oil filled drums and dispose of treated waste at the Environmental Restoration Disposal Facility (FY 2001/RL-RC02).

- # Continue safety surveillance and maintenance of site within the central core of the Hanford Site, but outside the boundary of the 200 Area Central Plateau Region; continue radiation area remedial actions; and provide necessary program management activities (FY 2000/FY 2001/RL-RC04).

- # The 300 Area Treated Effluent facility supported the transportation and disposal of remediation waste from 100/300 Area (river corridor) remedial action waste sites, disposed of over 2,500,000 tons of contaminated material since 1996, and processed up to 58,000,000 gallons of industrial wastewater annually. The Environmental Restoration Disposal Facility received 297,000 m^3 (639,107 tons) of contaminated soil and debris, completed interim closure of cells 1 and 2, thereby safely storing the waste and supporting commitments in the Tri-Party Agreement, and completed construction of cells 3 and 4 (FY 2000/RL-RC05).

- # At the 340 Waste Handling Facility: support transportation and disposal of remediation waste from 100/300 Area (river corridor) remedial action waste sites and continue surveillance and maintenance. The Environmental Restoration Disposal Facility will receive 228,000 m^3 (490,000 tons) of contaminated soil and debris for disposal. The 300 Area Treated Effluent Disposal Facility will process up to 58,000,000 gallons of industrial wastewater (FY 2001/RL-RC05).

- # Continue safety surveillance and maintenance and continue radiation area remedial actions (FY 2000/FY 2001/RL-RS01).

- # Developed new Work Breakdown Structures to support the Richland Site Outcomes approach and Multi-Year-Performance-Incentives for the Fluor-Hanford contract extension; implemented Headquarters Integrated Planning and Budgeting System to support budget formulation and environmental liability; provided Systems Engineering alternatives analysis in support of accelerated cleanup; completed five procedures to implement Fluor Hanford Inc., Systems Engineering Management Plan and developed draft mission level requirements document; completed the Uranium Mass Balance Project report; declassified 45,000 documents and 810,000 pages; and provided funds to State and local governments to replace equipment damaged during the Hanford range fire of CY 2000 (FY 2000/RL-SS01).

- # Transitioned the Richland Work Breakdown Structure to the new Site Outcomes; align local system to the Headquarters Integrated Planning and Budget System; implement the Multi-Year-Performance-Incentives with Fluor Hanford Inc., through reporting, change control and partnering; complete the Hanford Site safety analysis report for radioactive materials shipping containers; complete the closeout of the Westinghouse Hanford project; negotiate and implement the Hanford Site air operating permit; continue surveillance and maintenance of the Pacific Northwest National Laboratory legacy wastes and contamination; and continue limited characterization and disposition of remaining radioactive legacy waste from the past research operations (FY 2001/RL-SS01).

- # Installed eight Resource Conservation and Recovery Acts wells; completed routine well maintenance and groundwater monitoring activities; and completed routine seismic monitoring (FY 2000/RL-SS03).

- # Manage and integrate groundwater well installation, maintenance, refurbishment and abandonment; support installation of new monitoring wells of M-24 Tri-Party Agreement milestone; and manage and integrate groundwater monitoring requirements and implementation (FY 2001/RL-SS03).

Completed System Assessment Capability Revision 0 software development and testing; completed technical and management reviews of the System Assessment Capability; issued Science and Technology Roadmap, Revision 1; completed field activities at the Vadose Zone Transport Field Study site and commenced data evaluation; developed enhanced conceptual and numerical models of groundwater/river interface; conducted two Expert Panel meetings; and initiated tritium investigation at 618-11 burial ground (FY 2000/RL-SS04).

Continue site-wide integration of vadose zone characterization, assessments, modeling and monitoring. and the capability to assess the cumulative impacts of Hanford derived contaminants on the Columbia River and Northwest Region; continue application of science and technology to critical Hanford vadose zone, groundwater, and Columbia River needs; continue peer review process, public involvement enhancement and regulatory integration; continue development of models, development of mass-balanced estimate of soils waste inventories; conduct field experiments; continue development of the System Assessment Capability including completion of historical matching case analysis; analysis of risk and impact for the initial assessment performed with the System Assessment Capability; and complete functional review of the System Assessment Capability assessment summary document (FY 2001/RL-SS04).

Continue training at HAMMER in Environmental and Waste Management, Emergency Operations, Fire Operations, Occupational Safety and Health, Transportation, Technology and Law Enforcement. Continue the core components including: Conduct of Training and Learning Services, Operations and Maintenance of the facility, and Business Management activities. Continue to train Hanford Site and other DOE employees utilizing technology supported learning capabilities where appropriate. Continue to make available any excess HAMMER Training Center capacity to non-Hanford customers. Maintain the current role of being a training facility offering courses to industry and other governmental entities (FY 2000/FY 2001/RL-SS05).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
RL-CP01 / 200 Area Remediation	26,107	27,811	13,000
RL-RC01 / 100 Area Cleanup	43,519	49,728	42,958
RL-RC02 / 300 Area Cleanup	8,792	8,499	9,000
RL-RC04 / Central Core Area Cleanup	4,211	4,781	355
RL-RC05 / River Corridor Waste Management	26,724	25,960	15,000
RL-RS01 / South Hanford Industrial Area Cleanup	4,079	4,565	750
RL-SC01 / Near Term Stewardship	6,703	7,632	7,632
RL-SS01 / Site Integration	54,385	58,171	50,000
RL-SS03 / Groundwater Management and Monitoring	16,441	19,525	17,947
RL-SS04 / Groundwater/Vadose Zone Integration	10,994	10,133	7,000
RL-SS05 / HAMMER	5,781	5,700	1,000
Total, Richland Operations Office	207,736	222,505	164,642

Funding by Site

(dollars in thousands)

	FY2000	FY2001	FY 2002	$ Change	% Change
Hanford Site	207,736	222,505	164,642	-57,863	-26.0%
Total, Richland Operations Office	207,736	222,505	164,642	-57,863	-26.0%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	42	0	9
Facilities Deactivation			
During Period	26	0	3
Facilities Decommissioning			
Cleanup	27	0	1

Site Description

Richland Operations Office -- Hanford Site

The United States Department of Energy's Richland Operations Office manages the Department's Hanford Site, except for the High-Level Waste Tank Farms, in Southeastern Washington State. The 1,465 square kilometer (560 square mile) site is bounded on the north by over 80 kilometers (50 miles) of the Columbia River, and to the south by Rattlesnake Ridge. The flat plateau containing the Hanford Site is the only section of the mid-Columbia River that is not confined by gorges, and is known as the Hanford Reach. The Department leases some of Hanford's land to the State of Washington, which in turn leases it to US Ecology and Energy Northwest (formally Washington Public Power Supply System).

Hanford was established in secrecy during World War II to produce plutonium for the nation’s nuclear weapons. Peak production years were reached in the 1960's when nine production reactors were in operation along the river. The last to be decommissioned was the N-Reactor and its fuel in the K-Basins is now being relocated to higher ground in the central plateau, known as the 200 Area. The Plutonium Finishing Plant is one of the last production facilities that remains operational -- but only to process remaining plutonium materials. Other areas of the site include the Fast Flux Test Facility (400 Area) (currently budgeted and managed by the Office of Nuclear Energy); research and development activities by Pacific Northwest National Laboratories in the 300 Area; and support facilities in the 1100 Area, most of which have been turned over to the local community.

The Hanford mission is now site cleanup and environmental restoration to protect the Columbia River. The cleanup is covered by commitments initially in a 1989 consent agreement among the Department of Energy, the Environmental Protection Agency, and the Washington State Department of Ecology. This Tri-Party Agreement contains enforceable milestones to bring Hanford into compliance with the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act. Most of the Hanford budget is directed at compliance with these milestones. Additionally, the Defense Nuclear Facilities Safety Board takes great interest in safety at Hanford and has issued recommendations, which are the basis for the Defense Nuclear Facilities Safety Board commitments that are also high priority budget items.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

To support the site's missions, EM negotiated an extension of the current site operations contract through FY 2006 for transition work in the Central Plateau and the Spent Nuclear Fuel Project. The contract extension is performance based with 80 percent of the fee applied to the completion of specific cleanup activities and 20 percent of the fee applied to a comprehensive performance incentive. During the six-year performance period, the contractor is paid more fee for meeting multi-year performance objectives. Incremental progress and provisional fee payments will be provided to the contractor toward final completion of contract goals. A significant portion of the available fee is for stretch performance incentives, which requires the contractor to accelerate work by achieving cost and schedule efficiencies. For the restoration of the River Corridor, a closure contract is planned to be in-place by June 2002 with attributes similar to the Rocky Flats and Fernald contracts.

RL-CP01 / 200 Area Remediation 26,107 27,811 13,000

This project's mission is to accomplish remediation, groundwater management, surveillance and maintenance, facility deactivation, decontamination and decommissioning activities in the Hanford Central Plateau. In the 200 Area there are over 750 remaining waste sites located and adjacent to the 200 West Areas. The waste sites are primarily a result of spent fuel reprocessing activities. The soil and underlying groundwater are contaminated due to the disposal of liquid wastes in cribs, trenches, and ponds. Additionally, some of the high-level waste tanks located in the 200 Areas have leaked. Contaminated solid wastes have also been disposed of in numerous burial grounds in the 200 Areas.

- Continue 200 Area waste site remedial action,
- Continue the Hanford prototype barrier study.
- Continue the pump and treat and interim action monitoring.
- Continue the canyon disposition initiatives.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Continue safety surveillance and maintenance of inactive facilities in the 200 Area, including treatment, storage, and disposal units.
- # Continue radiation area remedial action activities, decontamination, groundwater treatment and confinement on the Central Plateau.
- # Continue decommissioning of the 233-S Plutonium Concentration Facility in the 200 Area.
- # Complete selective stabilization activities.
- # Prepare annual updates to Safety Analysis Reports and self-assessments and unreviewed safety questions screening as necessary.
- # Reflects initial funding for surveillance and maintenance of Building 209E transferred from the Office of River Protection.

Metrics			
Facilities Deactivation			
During Period	26	0	0
Facilities Decommission			
Cleanups	23	0	1

Key Milestones

- # Install four additional wells at the Single-Shell Tanks Waste Management Area S-SX (April 2001).
- # Install one additional well at the Single-Shell Tank Waste Management Area TX-TY (April 2001).
- # Submit Plutonium/organic-Rich Process Waste Group Work Plan (June 2001).
- # Submit Draft A Gable Mountain Pond/B Pond and Ditch Cooling Water Group Feasibility Study (November 2001).
- # Submit 3 200 National Priorities List Remedial Investigation/Feasibility Study (Resource Conservation and Recover Act Facility Investigation/Corrective Measures Study) work plans (December 2001).

RL-RC01 / 100 Area Cleanup	**43,519**	**49,728**	**42,958**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The 100 Area Cleanup Project mission includes remediation of over 550 past practice waste sites and decontamination and decommissioning of facilities associated with six reactor areas (including nine reactors) located along the Columbia River in the northern portion of the Hanford Site. The project continues remediation of groundwater contaminant adjacent to the Columbia River. The project remediates waste sites in accordance with Records of Decision, decontamination and decommissioning of ancillary facilities, placement of reactor blocks in interim safe storage, and the conduct of ongoing surveillance and maintenance activities through completion of remedial actions. The 100 Area Cleanup Project has enhanced the schedule for completion of remedial action and reactor interim safe storage, with completion scheduled for FY 2012.

- # Complete excavation of waste sites, complete backfill of waste sites and continue excavation of B and C Pipelines.
- # Initiate remedial design for 100 Area burial grounds, continue work on 100-NR-1 operable unit source sites remedial design-Phase 1.
- # Continue pump and treat operations and fuel storage basin remediation at the F-Reactor.
- # Maintain the In Situ Redox Manipulation Project barrier and associated wells.
- # Maintain evaporation pond and close pond following evaporation of extraction water from In Situ Redox Manipulation Project emplacement activities.

Metrics			
Release Site			
Cleanups	31	0	9
Facility Decommission			
Cleanup	4	0	0

Key Milestones

- # Establish date for completion of all 100 Area remedial actions (June 2002).
- # Complete 100-HR-3 Phase II In-Situ Redox Manipulation Barrier Emplacement (June 2002).
- # Complete 100-HR-3 Phase III In-Situ Redox Manipulation Barrier Emplacement (September 2002).

RL-RC02 / 300 Area Cleanup	**8,792**	**8,499**	**9,000**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The 300 Area Cleanup Project mission includes the remediation of over 100 waste sites in and adjacent to the 300 Area and the decontamination and decommissioning of excess facilities located within the 300 Area. The 300 Area is located immediately north of the City of Richland and adjacent to the Columbia River. The project also includes surveillance and maintenance of 300 Area facilities after completion of deactivation and decontamination and decommissioning of Landlord Facilities.

- # Continue surveillance and maintenance program to assure minimum safe conditions for deactivated 300 Area facilities.
- # Continue uranium/oil filled drum disposition.
- # Continue excavation of 618-4 burial ground including verification, backfill, regrading and revegetation.

Metrics			
Release Site			
Cleanups	11	0	0

Key Milestones

- # Bowing Ball Cask Waste removal from the Pacific Northeast National Laboratory complete (September 2001).
- # Complete remediation of the waste sites in the 300-FF-1 Operable Unit (September 2001).
- # Establish date for completion of the 300 Area remedial actions (September 2002).

RL-RC04 / Central Core Area Cleanup 4,211 4,781 355

The Central Core Cleanup project consists of remedial actions at waste sites located in the Columbia River Corridor's central sub-segment. This project covers that portion of the Hanford site (excluding the 100 and 200 Areas and associated buffer zone) lying north of the Energy Northwest Site and the Laser Interferometer Gravitational Wave Observatory, also referred to as the 600 Area. The area is outside primary facilities used at Hanford for waste operations and disposal. Workscope covers the source remedial action in this area and will be grouped into geographic zones based on the operable unit designations for these areas and the characteristics of the waste sites and remedial actions proposed.

- # Continue safety surveillance and maintenance of site within the central core of the Hanford Site, but outside the boundary of the 200 Area Central Plateau Region.
- # Continue radiation area remedial actions.
- # Provide necessary program management activities.

RL-RC05 / River Corridor Waste Management 26,724 25,960 15,000

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project's primary mission is to provide for the long-term Comprehensive Environmental Response, Compensation and Liability Act waste disposal needs. The Hanford Site's Environmental Restoration Disposal Facility operation/transportation activities support 100/300 Area remedial action (soils excavation) and the decontamination and decommissioning (debris) activities. In addition, the project includes operating a liquid effluent disposal facility, as well as maintenance of the 340 Waste Handling Facility (300 Area TEDF) until deactivation is achieved.

- # Will receive 215,000 m3 (461,000 tons) of contaminated soil and debris for disposal at the Environmental Restoration Disposal Facility.
- # Support transportation and disposal of remediation waste from 100/300 Area (river corridor) remedial action waste sites.
- # Will process up to 58,000,000 gallons of industrial wastewater at the 300 Area Treated Effluent Disposal Facility.
- # Continue surveillance and maintenance of the 340 Waste Handling Facility.

Key Milestones

- # Submit evaluation of development status of Tritium Treatment Technology to the Environmental Protection Agency and the Washington Department of Ecology (August 2001).

RL-RS01 / South Hanford Industrial Area Cleanup 4,079 4,565 750

The project includes the surveillance, maintenance, deactivation, and decommissioning of facilities located in the Columbia River corridor's southern sub-segment (excluding the river corridor and the 300 Area) lying south of the Central Plateau, and adjacent to the 300 Area, and includes the 400 Area, the Energy Northwest Site, and Laser Interferometer Gravitational Wave Observatory; and specifically including the remediation of the 618-10 and 618-11 Burial Grounds starting in FY 2013. The project also covers surveillance and maintenance of these facilities pending final disposition. The deactivation and decontamination and decommissioning of the remaining facilities in the 300 Area after completion of the 300 Area Clean up (PBSs RL-RC02 and RL-RC06) is also covered within this PBS.

- # Continue safety surveillance and maintenance.
- # Continue radiation area remedial actions.

Metrics

Facility Deactivation

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
During Period	0	0	3

RL-SC01 / Near Term Stewardship 6,703 7,632 7,632

Resource Conservation/Utilization includes the earlier aspects of long-term stewardship activities prior to complete site closure. This includes activities necessary to plan, preserve and protect human, ecological, natural, and cultural resources during the current period out through FY 2046, and activities that establish the foundation for long-term (post-closure) residual risk management. These activities include the application of necessary institutional and engineered controls, as well as providing localized weather information for routine safety operations and emergency response, performing sitewide and off-site environmental monitoring, and determining radiological exposures to the public and environment and publishing the results in the Hanford Site Annual Environmental Report.

Continue long-term and post remediation surveillance, monitoring and site inspections for the 100, 300 and 1100 areas.

Key Milestones

Complete FY 2001 Hanford Cultural Resources Laboratory annual report (December 2001).
Conduct Bi-Annual Baseline Surveys for Ecological Compliance (June 2002).
Provide CY 2001 Annual Site Environmental Report to Richland/Public (September 2002).

RL-SS01 / Site Integration 54,385 58,171 50,000

This PBS includes the Richland site-wide requirements such as: site planning and integration, environmental compliance, site systems engineering, Richland Directed, information resource management, contractor training administration, and the Pacific Northwest National Laboratory Waste Management.

Site Planning and Integration: prepare/implement site plans, strategic, PBS, via performance measurement, reporting and change control.
Environmental Compliance: perform crosscut activities: facility monitoring, reporting radiation emissions, and liquid discharges.
Richland Directed: continue fee, permit, and payments to state and local governments and support to "downwinder" litigation.
Site Systems Engineering: provide site engineering support to ensure integrated technical requirements and value engineered solutions.
Information Resource Management: provides technical support to system servers, and software.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Contractor Training Administration: provide training services in support of the Richland workforce.
- # Pacific Northwest National Laboratory Waste Management: provide essential base services for waste/effluent management and for regulatory/permit compliance.
- # Pacific Northwest National Laboratory: surveillance and maintenance for the Pacific Northwest National Laboratory Legacy Waste, continue disposition of legacy waste.

Key Milestones

- # Pacific Northeast National Laboratory Phase II Room 604 Glovebox cleanout complete (September 2002).

RL-SS03 / Groundwater Management and Monitoring 16,441 19,525 17,947

This project provides for the groundwater management and monitoring activities that occur irrespective of the geographic location. This will also include post closure surveillance and maintenance activities required prior to site closure. The Columbia River crosses the northern portion of the Hanford Site and essentially forms the eastern boundary. Groundwater under the Hanford Site has been contaminated through discharge of waste liquids to cribs, ditches, trenches, and ponds. Currently approximately 220 square kilometers of groundwater exceed drinking water standards and portions of this contaminated groundwater have reached the Columbia River.

- # Manage and integrate groundwater well installation, maintenance, refurbishment and abandonment.
- # Manage and integrate the groundwater monitoring requirements and implementation.
- # Support installation of new monitoring wells of M-24 Tri-Party Agreement milestone.

Key Milestones

- # Issue Hanford Site Groundwater monitoring results for FY 2000 (March 2001).
- # Install Resource Conservation and Recovery Act groundwater monitoring wells at rate up to 50 wells in CY 2001 (December 2001).

RL-SS04 / Groundwater/Vadose Zone Integration 10,994 10,133 7,000

The project mission is to integrate ongoing groundwater treatment projects and ongoing studies on the vadose zone across the Hanford Site, determine the cumulative impacts of all Hanford Site wastes on the region and its people, apply sound science and technology, and partner with regulators, stakeholders, and Tribal Nations.

- # Continue site-wide integration of vadose zone characterization, assessments, modeling and monitoring.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Continue development of the capability to assess the cumulative impacts of Hanford derived contaminants on the Columbia River and Northwest Region.
- # Continue application of science and technology to critical Hanford vadose zone, groundwater, and Columbia River needs.
- # Continue peer review process, public involvement enhancement and regulatory integration.
- # Continue development of models, development of mass-balanced estimate of soils waste inventories, conduct field experiments.
- # Implement the high priority activities identified in the Science and Technology Plan and Roadmap.

RL-SS05 / HAMMER 5,781 5,700 1,000

The Hazardous Materials Management and Emergency Response (HAMMER) Training and Education Centers main site is a one-of-a-kind 120-acre worker safety training facility featuring the most extensive number of training props currently available at one location. HAMMER is a national hands-on training and education center designed to prepare workers and emergency responders to safely perform tasks, especially those that are high-risk and use new technology. HAMMER and its partners host, broker and provide regulatory-required health and safety training involving the hands-on use of realistic props and settings in order to save lives, reduce injuries and increase worker productivity. These activities will be required throughout the life of the Hanford Site.

- # Continue limited training at HAMMER in Environmental and Waste Management, Emergency Operations, Fire Operations, Occupational Safety and Health, Transportation, Technology and Law Enforcement.
- # Continue the core components including: Conduct of Training and Learning Services, Operations and Maintenance of the facility, and Business Management activities.
- # Continue to train Hanford Site and other DOE employees utilizing technology supported learning capabilities where appropriate.
- # Continue to make available any excess HAMMER Training Center capacity to non-Hanford customers.
- # Maintain the current role of being a training facility offering courses to industry and other governmental entities.

Total, Hanford Site - Richland 207,736 222,505 164,642

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
RL-CP01 / 200 Area Remediation	
# Decrease in funding reflects conversion of indirect expenses to direct expenses and funding of higher priority program activities.	-14,811
RL-RC01 / 100 Area Cleanup	
# Decrease in funding reflects milestones 97 (M-016-27B), 104 (M-106-27C), and 105 (M-16-00F) being missed for B/C pipeline and 100 DR remediation. Decrease in funding also reflects funding of higher priority program activities.	-6,770
RL-RC02 / 300 Area Closure	
# Increase in funding reflects additional facility activities and cleanup acceleration.	501
RL-RC04 / Central Core Area Cleanup	
# Decrease in funding reflects reduced volume of anticipated remediation in the north end of this sector and funding of higher priority program activities.	-4,426
RL-RC05 / River Corridor Waste Management	
# Decrease in funding reflects conversion of indirect expenses as direct charges and funding of higher priority program activities.	-10,960
RL-RS01 / South Hanford Industrial Area Cleanup	
# Decrease in funding reflects conversion of indirect expenses to direct expenses and funding of higher priority program activities.	-3,815
RL-SS01 / Site Integration	
# Decrease reflects funding of higher priority program activities.	-8,171
RL-SS03 / Groundwater Management and Monitoring	
# Decrease in funding reflects conversion of indirect expenses to direct expenses and funding of higher priority program activities.	-1,578
RL-SS04 / Groundwater/Vadose Zone Integration	
# Decrease in funding reflects conversion of indirect expenses to direct expenses and funding of higher priority program activities.	-3,133
RL-SS05 / HAMMER	
# Decrease in funding reflects conversion of indirect expenses to direct expenses and funding of higher priority program activities.	-4,700
Total Funding Change, Hanford Site - Richland	-57,863

Savannah River

Mission Supporting Goals and Objectives

Program Mission

The Defense Environmental Restoration and Waste Management, Post 2006 Completion account, Savannah River cleanup program has as its mission the treatment and disposal of the legacy materials and wastes that resulted from the production of nuclear materials during the Cold War. This legacy includes contaminated facilities and land areas, many of which still contain nuclear materials and wastes. The Savannah River Site, located near Aiken, South Carolina, covers over 300 square miles and includes five inactive nuclear reactors, two chemical separations facilities, fuel and target fabrication facilities, tritium processing facilities, a heavy water facility, two high-level waste tank farms, low-level waste storage and disposal facilities, a high-level waste treatment facility, the Savannah River Technology Center, and numerous administrative and technical support facilities. Additionally these facilities have varying degrees of environmental contamination (soil and groundwater); the majority of which will require some remedial action to address environmental and health risks.

The Savannah River Cleanup Program is composed of the following major elements: spent nuclear fuel management, nuclear materials stabilization and storage, waste management (high-level, transuranic, hazardous, mixed low-level, and other), deactivation, remediation, and supporting landlord requirements. This account funds 48 projects whose life-cycle will be completed after FY 2006, and implementation of up to 13 integrated technology development initiatives that are needed to support fully developed, deployable, scientific technical solutions to EM cleanup and long-term environmental stewardship problems.

Program Goal

The Savannah River Site is committed to managing the spent nuclear fuel, stabilizing and storing nuclear materials, and managing all types of wastes using currently available (or near-term) technology and facilities. Eventually, the nuclear materials will be dispositioned and the remaining spent nuclear fuel and wastes will be sent to disposal repositories. To the extent possible (to be determined through technical analyses, National Environmental Policy Act review, and the regulatory process) Savannah River Site is assisting other sites in elimination of their Cold War "legacy". Foreign Research Reactor spent nuclear fuel and Domestic Research Reactor spent fuel receipts will continue at the Savannah River Site. Onsite spent nuclear fuel will be stored in existing water-filled basins, pending stabilization, if determined necessary, or treated for disposition via development and construction of a Spent Nuclear Fuel Treatment and Storage Facility to prepare spent nuclear fuel for shipment to a geologic repository. Approximately nineteen hundred canisters of high-level waste, representing 33 percent of inventoried high-level waste, will be vitrified by FY 2006. Some of the major

inactive processing facilities will be deactivated after FY 2006 and most high-risk release sites will be remediated by that time.

Due to the variety and amounts of nuclear materials and wastes onsite, the extent of facility and land contamination, and its role in solving cleanup issues at other "legacy" sites in the Department of Energy complex, the Savannah River Site will have a "long-term" cleanup mission extending beyond FY 2006. As an example, Savannah River Site will receive transuranic waste from the Mound Site in FY 2002 to support Mound closure. After FY 2006, the focus will be on receiving a small amount of foreign research reactor fuel and a continuing quantity of domestic research reactor spent nuclear fuel; managing the high-level, transuranic, hazardous, mixed low-level, and other wastes through about FY 2035; deactivating facilities as missions are completed and the facilities become excess; and remediating the remaining low risk sites.

Program Objectives

The objective of the Spent Nuclear Fuel program is to support the U.S. nonproliferation policy through implementing the Foreign Research Reactor Spent Fuel Acceptance program and to manage the spent nuclear fuel currently at the site (foreign and domestic research reactor spent nuclear fuel, as well as the Savannah River Site production reactor spent nuclear fuel) by stabilizing the fuel, if necessary, or preparing it for long-term disposition in a Federal repository. Some of the spent nuclear fuel currently onsite (aluminum based or declad spent nuclear fuel in a degraded condition) is considered to be "at-risk" and is being shipped to the canyon facilities for processing. [SR-SF01-LT, SR-SF02, SR-SF03, SR-SF06LT]

Spent nuclear fuel that does not require stabilization for health and safety reasons will require additional treatment or packaging to prepare it for disposal in a geologic repository. The Alternative Technology project is evaluating a melt and dilute treatment technology that would provide a suitable form for disposal without separating the fissile elements (primarily highly enriched uranium) through the construction and use of the L-Area Experimental Facility (SR-SF06LT).

The Savannah River Site waste management activities encompass all types of waste generated and stored at the Savannah River Site. The High-Level Waste program integrates management of existing and new facilities to reduce volume, treat and vitrify high-level waste for final disposal, and to empty storage tanks so they can be closed. The Savannah River Site has an estimated 143,653 m^3 (approximately 38,000,000 gallons) of high-level waste in the form of liquid, sludge and salt cake. This volume represents about 410,000,000 curies of radioactivity and is stored in 49 active tanks in two "tank farms" and related high-level waste facilities. Included are operation of three high-level waste evaporators to provide space in the tank farms to handle waste generated by the stabilization of nuclear materials. Other high-level waste facilities provide for the continued safe storage of existing and newly generated high-level waste, operation of the Defense Waste Processing Facility, the Extended Sludge Processing facilities, and operation of the Glass Waste Storage Building to store "road ready" vitrified high-level waste. The operation of the Saltstone Facility has been curtailed until an alternative for salt processing is implemented. In FY 2002, 34 MTHM of spent nuclear fuel will continue to be managed in existing wet-basin storage at the Savannah River Site. Approximately 78,125 m^3 of waste will be

treated at the Effluent Treatment Facility. No facilities will be deactivated in order to avail funding for higher priority activities, although 13 release sites (about 3 percent of the release sites) will be remediated in FY 2001. [SR-HL01, SR-HL02, SR-HL03, SR-HL04, SR-HL05, SR-HL06, SR-HL07, SR-HL08, SR-HL12]

The In-Tank Precipitation and Late Wash facilities were expected to pretreat the salt portion of the high-level waste. Due to technical issues concerning the degradation of the product materials and the generation of larger than anticipated amounts of benzene, all activities for pre-treatment of the salt feed have been suspended. A salt processing systems engineering evaluation has been completed. All known salt processing options have been evaluated against the high-level waste system requirements resulting in alternatives to be considered. Research and development activities will continue to support selection of a viable alternative in FY 2001. A supplemental Environmental Impact Statement is being prepared to assist in the decision making process upon completion of sufficient research and development. [SR-HL13]

The Savannah River Site also manages varying amounts of other waste types. Efforts to reduce the legacy volume of waste at the site have been most effective in the low-level waste and hazardous waste areas. Major activities in solid waste management include: minimal surveillance and maintenance of the Consolidated Incinerator Facility (beginning in FY 2001), continued offsite shipment of hazardous waste and polychlorinated biphenyl waste, and other wastes identified in the Site Treatment Plan, safe storage of transuranic waste and shipment of transuranic waste to the Waste Isolation Pilot Plant, continued operation of mixed low-level waste, low-level waste facilities, the Effluent Treatment Facility, continued sanitary waste, and pollution prevention/waste minimization operations. Receipt of transuranic waste from Mound will occur in FY 2002, and twice the volume received will be shipped off of the Savannah River Site to the Waste Isolation Pilot Plant. [SR-SW01, SR-SW02, SR-SW03, SR-SW04, SR-SW05, and SR-SW06]

In addition the Pollution Prevention activities focus National attention on areas that impact the EM goals and planned efforts across the Department of Energy complex. [SR-SW07]

The Savannah River Site has identified over 700 currently inactive legacy facilities to be deactivated. Facility assessments are being undertaken to provide condition / hazard characterization, and to establish documented surveillance and maintenance plans. However, full development and implementation of facility disposition plans have been deferred for these facilities in order to provide funding for higher priority activities. This budget does not include any significant activity related to facility deactivation. [SR-FA02, SR-FA16, SR-FA18, SR-FA19, SR-FA20, SR-FA23, SR-FA26, SR-FA27, SR-FA28, SR-FA31, SR-FA35]

Deactivation will begin once the bulk nuclear materials are stabilized/removed from a facility and consists of activities such as removal of hazardous chemicals, flushing and cleanout of systems and equipment to the point that little contamination or safety risk to workers, the public, and the environment exists. As this is achieved, the attributes of an operating nuclear facility(security, radiation protection, material control and accountability, etc.) can be eliminated or substantially curtailed resulting in major reductions in surveillance and maintenance costs. Extensive deactivation of the reactors (C-, P-, and R-Areas), heavy water production (D-Area), and fuel fabrication facilities (M-Area) has resulted in major reductions in the annual surveillance and maintenance costs for these facilities. Deactivation is yet to be substantially undertaken in K- and L-Areas, Separations (F- and

H-Areas), and the waste management facilities in F-, H-, and S-Areas since these facilities are operating and/or still contain substantial quantities of nuclear materials or wastes.

The environmental restoration activities encompass all aspects of assessment and remediation of facilities and release sites (including associated groundwater) that are no longer a part of active operations at the Savannah River Site. There are currently 515 release sites at Savannah River. These release sites are grouped into six watershed areas: Flood Plain Swamp, Fourmile Branch, Lower Three Runs, Pen Branch, Steel Creek, and Upper Three Runs. Primary onsite contaminants include various nuclides (including plutonium, tritium, and uranium), volatile organic compounds, heavy metals, and solvents. Restoration activities are conducted at the Savannah River Site pursuant to the Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, the site Federal Facilities Agreement (August 1993), several settlement agreements, and a consent decree. Through FY 1999, 219 release sites were completed. In FY 2000, 17 release sites were completed, in FY 2001 completion of an additional six release sites and in FY 2002 an additional five. The Savannah River Site's objective for environmental restoration remediation activities is to have most high-risk release sites in remediation by FY 2006. [SR-ER01, SR-ER02, SR-ER03, SR-ER04, SR-ER05, SR-ER06, SR-ER07]

Landlord activities are directed toward the management of general purpose infrastructure and site-wide program support that are essential for accomplishing essential missions at the Savannah River Site and maintaining the viability of the site for potential new missions in areas such as non-proliferation. Specific examples of infrastructure and support systems include: grounds, roads, general purpose buildings, utilities, communications, computers and information management, fleet management, maintenance and fabrication, emergency services, safeguards and security, land management, analytical laboratories, and environmental test facilities. Other examples include grants to two states for emergency management purposes; to three counties for payment-in-lieu-of-taxes; and to several universities for research in support of site missions. Interagency agreements, plus a cooperative agreement with the University of Georgia for managing the Savannah River Ecology Laboratory are also funded. [SR-DO03, SR-DO04, SR-DO05, SR-DO07, SR-IN11, SR-IN12]

In achieving our highest-priority goals, the Savannah River Operations Office will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, less expensively, and faster. For instance, a preferred process will be selected from innovative alternatives for removal of cesium from tank waste in support of the Savannah River Site's Salt Processing project. Also, a remotely operated tool (HANDS-55) will be used to open 55-gallon drums of waste, remove non-compliant items, and repackage the waste for transfer to the Waste Isolation Pilot Plant. A natural phytoremediation system is using the nearby forest to naturally and safely reduce the release of tritium to Four Mile Branch at the site.

Significant Accomplishments and Program Shifts

- Achieved space gain of 2,900,000 gallons (FY 2000), 3,000,000 gallons (FY 2001), and 3,000,000 (FY 2002) in tank farm through evaporation (SR-HL01/SR-HL02).
- Produced 231 canisters (FY 2000), and plan to produce 220 canisters in FY 2001, and 150 canisters in FY 2002 of vitrified high-level waste at the Defense Waste Processing Facility (SR-HL05).
- Part-time operation of the Consolidated Incinerator Facility in FY 2000 and placement of the facility in cold standby until at least FY 2003.
- Complete 17 release site assessments in FY 2000, eight in FY 2001, and five in FY 2002.
- Remediation of 350,000,000 gallons of groundwater (FY 2000), and removal of 100,000 lbs. of volatile organic compound (FY 2000) in the A/M Areas. Continue operation of groundwater remediation systems in A/M Area, F/H Areas, and TNX Areas (FY 2001).
- Receive the Waste Isolation Pilot Plant certification to ship transuranic waste (FY 2001).
- Prepare four shipments of disposal-ready transuranic waste for shipment to the Waste Isolation Pilot Plant (FY 2001).
- Continue operation of the Waste Sort Facility and the Super Compactor Facility for low-level waste (FY 2000, FY 2001) and commence operation of engineered trench #1 (FY 2001/SR-SW04).
- Commenced offsite disposal of some environmental restoration low-level waste (FY 2000) and continue off-site disposal of other low-level waste and commence offsite treatment and disposal of mixed low-level waste (FY 2001).
- Receive 29 casks of foreign research reactor spent nuclear fuel and 20 casks of domestic research reactor spent nuclear fuel (FY 2001).
- Receive 33 casks of foreign research reactor spent nuclear fuel and 21 casks of domestic research spent nuclear fuel (FY 2002).
- Complete construction of L-Area Experimental Facility in FY 2001 and begin operation of facility to demonstrate melt and dilute technology in FY 2002 (SR-SF06-LT).
- Remediate portions of the D-Area Oil Seepage Basin, Old TNX Seepage Basin, 488 D Ash Basin, and TNX Outfall Delta (FY 2001/SR-ER01).
- Begin interim action on Mixed Waste Management Facility groundwater (FY 2001/SR-ER02).
- Begin remedial action at the C-Area Reactor Seepage Basin (FY 2001/SR-ER02).
- Begin final closure of the Burial Ground (ORWBG) waste site (FY 2001/SR-ER02).
- Perform remediation technology deployments (FY 2001/SR-ER03).

- Remediate portion of the K-Reactor seepage basin, CMP waste site, central shops sludge lagoon, and L- and K-Area hazardous material waste sites (FY 2001/SR-ER04).
- Continue Phase I Remedial Action construction activities at A-Area Burning rubble pits (FY 2001/SR-ER06).
- Completed initial F-Canyon deactivation planning (FY 2000).
- Begin deactivation of the 313-M Target Slug Manufacturing Facility (FY 2001) with completion planned for FY 2002 (SR-FA18/SR-FA27).
- Perform walkdowns on fifteen additional facilities and develop remedial action plans including those in H-Area (FY 2001/SR-FA23).
- Demolish the F-Area powerhouse (FY 2001/SR-FA23).
- Complete sludge batch Two washing and initiation of feed to the Defense Waste Processing Facility (FY 2001/SR-HL04).
- Process up to approximately 18,000,000 gallons of waste water (FY 2002/SR-HL07).
- Complete remaining pre-conceptual activities associated with target line-items such as infrastructure restoration, electrical maintenance and technical area ventilation, using prior year funds (FY 2001/SR-IN11).
- Procure and install capital equipment/general plant projects for landlord facilities and operations (FY 2001/FY 2002/SR-IN12).
- Continue spent nuclear fuel activities for the K-Area (FY 2000/FY2001/SR-SF01-LT).
- Complete plutonium receipts from Rocky Flats to the K-Area Nuclear Material Storage Modification Facility (FY 2002/SR-SF01LT).
- Transfer aluminum clad fuels from the Receiving Basin for Off-site Fuels to the L-Basin (FY 2001/FY 2002/SR-SF02/SR-SF03).
- The Defense Nuclear Facilities Safety Board Recommendation 94-1 and 2000-1 shipments from the K- and L-Basin to the H-Canyon will continue (FY 2001/SR-SF01-LT/SR-SF02).
- Complete eight shipments of Sterling Forest Oxide to the H-Canyon in FY 2001 and 17 shipments in FY 2002 (FY 2001/FY 2002/SR-SF03).
- Commence operation of Mixed Waste Processing Facility to prepare legacy waste for treatment (FY 2001/SR-SW03).
- Complete shipment of incinerable radioactive polychlorinated biphenyl waste to the Oak Ridge Operations Office for treatment (FY 2001/SR-SW03).

- # Complete fifth and final year of shipments of chemicals, metals, and pesticides Pit soils for treatment and disposal (FY 2001/SR-SW05).
- # Complete characterization of land disposal restrictions hazardous legacy waste awaiting radiological characterization, (i.e. make determination if waste is mixed or non-rad hazardous) (FY 2001/SR-SW05).
- # Maintain contamination area rollback, recover 10 percent of contaminated areas per year (FY 2000/ FY 2001/SR-SW07).
- # Administer High Return-on-Investment/Generator Set Aside Fee Programs (FY 2001/SR-SW07).
- # Begin packaging stainless steel and zironium clad fuels for shipment from RBOF to the L-Basin (FY 2002/SR-SF03).
- # Complete one shipment of stainless steel and zironium clad fuels to the L-Basin after modifying procedures and performing criticality and other analyses (FY 2001/SR-SF03).

Funding Schedule

(dollars in thousands)

	FY2000	FY 2001	FY 2002
SR-DO03 / Savannah River Natural Resource Management and Research Institute	6,371	7,000	5,000
SR-DO04 / Ecology Lab Project	7,929	8,000	6,000
SR-DO05 / DOE External Program Support	7,348	5,530	3,530
SR-DO07 / DOE Program Support	15,204	11,231	8,231
SR-ER01 / Flood Plain Swamp Project	4,948	9,364	2,130
SR-ER02 / Four Mile Branch Project	35,543	34,830	12,000
SR-ER03 / Lower Three Runs and Operations Project	29,280	31,050	15,000
SR-ER04 / Pen Branch Project	9,929	7,934	2,900
SR-ER05 / Steel Creek Project	4,535	3,214	2,000
SR-ER06 / Upper Three Runs Project	20,248	21,953	7,500
SR-ER07 / Program Management	9,025	8,751	5,000
SR-FA02 / F-Canyon Deactivation Project	77	0	0
SR-FA16 / F-Area Monitoring	72	689	0
SR-FA18 / M-Area Monitoring Project	8,346	8,490	0
SR-FA19 / D-Area Monitoring Project	786	320	0
SR-FA20 / Reactors Monitoring Project	12,759	7,877	0
SR-FA23 / Landlord Facilities Disposition	3,384	4,506	3,131
SR-FA26 / Long-Term Stewardship	0	0	182
SR-FA27 / M-Area Disposition	0	0	7,661

(dollars in thousands)

	FY2000	FY 2001	FY 2002
SR-FA28 / P, C, R Reactor Areas Disposition	0	0	8,731
SR-FA31 / D-Area Disposition	0	0	605
SR-FA35 / Research and Demonstration Facilities	0	0	490
SR-HL01 / H-Tank Farm	92,427	94,384	90,732
SR-HL02 / F-Tank Farm	59,659	60,138	63,207
SR-HL03 / Waste Removal Operations and Tank Closure	4,539	3,547	3,547
SR-HL04 / Waste Pretreatment	54,273	51,734	51,734
SR-HL05 / Vitrification	114,208	110,639	110,639
SR-HL06 / Glass Waste Storage	647	684	684
SR-HL07 / Effluent Treatment Facility	15,268	15,138	15,138
SR-HL08 / Saltstone	683	976	976
SR-HL12/ High-Level Waste Removal	23,759	32,137	10,000
SR-HL13/ Salt Disposition	13,679	21,141	31,263
SR-IN11/ Infrastructure Line Item	568	148	0
SR-IN12 / Operating Projects	21,972	17,433	17,433
SR-IN18 / Steam Systems Upgrade	0	0	1,200
SR-SF01-LT / K-Area Spent Nuclear Fuel Project	27,749	32,286	32,286
SR-SF02 / L-Area Spent Nuclear Fuel Project	36,128	27,101	27,101
SR-SF03 / RBOF Spent Nuclear Fuel Project	14,365	14,975	13,747
SR-SF04-LT / Heavy Water - D-Area	212	0	0
SR-SF06LT/ Alternate Technology Project	4,411	4,350	4,000
SR-SF09 / Spent Nuclear Fuel Treatment and Storage	7,000	0	0
SR-SW01 / Consolidated Incinerator Facility	20,301	1,864	1,291
SR-SW02 / Transuranic Waste Project	12,766	16,050	6,000
SR-SW03 / Mixed Low-Level Waste Project	3,973	8,789	3,973
SR-SW04 / Low-Level Waste Project	16,232	12,456	6,563
SR-SW05 / Hazardous Waste Project	5,660	3,337	3,337
SR-SW06 / Sanitary Waste Project	989	1,047	1,047
SR-SW07 / Pollution Prevention	1,276	1,563	0
Total, Savannah River	728,528	702,656	585,989

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Savannah River Site	691,676	670,895	563,228	-107,667	-16.0%

Savannah River Operations Office	36,852	31,761	22,761	-9,000	-28.3%
Total, Savannah River	728,528	702,656	585,989	-116,667	-16.6%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Release Site			
Cleanups	17	6	5
Facilities Deactivation			
During Period	0	2	0
Transuranic Waste			
Shipped to WIPP for Disposal (m^3)	0	103	600
Mixed Low-Level Waste			
Treatment (m^3)	633	168	45
Disposal (m^3)	0	285	100
Low-Level Waste			
Disposal (m^3)	11,877	4,894	8,000
High-Level Waste			
Canisters Produced (canisters)	231	220	150

Site Description

Savannah River Site

The complex covers 198,344 acres, or 310 square miles encompassing parts of Aiken, Barnwell, and Allendale counties in South Carolina, bordering the Savannah River Site.

The site is owned by the Department of Energy and operated by an integrated team led by Westinghouse Savannah River Company. Under the contract extension that became effective October 1, 2000, the Westinghouse Savannah River Company is responsible for the site's nuclear facility operations; applied research; environment, safety, health, and quality assurance; and all of the site's administrative functions. The team also includes Bechtel Savannah River Inc. (parent company: Bechtel National Inc.), which is responsible for environmental restoration, project management, engineering and construction activities; Babcock and Wilcox Savannah River Company (parent Company: Babcock and Wilcox Government Group), which is responsible for facility decontamination and decommissioning; and the British Nuclear Fuel Limited Savannah River Corporation (parent company: British Nuclear Fuel Limited, Inc.), which is responsible for the site's solid waste program.

Due to past operations and disposal practices, the Savannah River Site was placed on the Comprehensive Environmental Response, Compensation, and Liability Act National Priorities List by the Environmental Protection Agency in 1989. In 1993, the Savannah River Site entered into a Federal Facility Agreement with the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control to ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated and that appropriate corrective/remedial action is taken, as necessary, to protect the public health and welfare and the environment. In addition to the Federal Facility Agreement, the Savannah River Site has also entered into assessment/cleanup of several portions of the site via Resource Conservation and Recovery Act permits as required by several settlement agreements.

The Savannah River Site is managed through an incentivized Management and Operating contract, with fixed-price subcontracts, to assure the most cost efficient service to the Government. Incentivized work scope includes nuclear materials stabilization, radioactive waste management, and environmental restoration programs. The funds requested for FY 2002 are appropriate to perform the activities based on the use of the "Activity-Based Costing Methodology." All construction line-item projects were validated and many projects received an independent cost estimate review.

Detailed Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

SR-DO03 / Savannah River Natural Resource Management and Research Institute 6,371 7,000 5,000

The Savannah River Natural Resource Management and Research Institute conducts a program of natural management and research to provide sustainable forest products within a National Environmental Research Park, enhance biological diversity, protect threatened, endangered, and sensitive species, and provide quality habitat for wildlife. The Savannah River Institute manages the Savannah River Site secondary road system, maintains the exterior boundaries, participates in waste-site closure projects, and provides aerial photo services. Also, the Savannah River Institute provides a wildland fire program that ensures onsite initial attack capability, as well as fire prevention, presuppression, and detection program.

- The Savannah River Institute will continue with a cost-effective program of natural resource management and research to enhance environmental diversity, protect endangered species, provide quality habitat for native wildlife, protect soil and watershed values, in a national environmental park.
- The Savannah River Institute's Fire Management program will work to protect natural resources and site improvements from wildland fire and smoke impacts.
- A prescribed burn program (reduced by 90 percent) will be conducted to accomplish the Red-Cockaded Woodpecker and threatened and endangered species habitat management.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Engineering section will manage the Savannah River Site secondary road and bridge system, and handle all aspects of the Savannah River Site exterior boundary.

SR-DO04 / Ecology Lab Project 7,929 8,000 6,000

The Savannah River Ecology Laboratory is a research unit of the University of Georgia operating on the Savannah River Site for over forty years. The laboratory works closely with other contractors to provide an independent academic assessment of site cleanup and continuing operations. The Savannah River Ecology Laboratory is conducting research which will provide the site operational personnel with information aimed at reducing the cost of cleanup and remediation while ensuring biodiversity to the restored environment. In addition, the Savannah River Ecology Laboratory has provided the Department of Energy with important data relating to the regulatory requirements for endangered plants and animals.

The research for FY 2002 is conducted in the framework of four programs. While research is conducted within this framework, it is not restricted by it. The Savannah River Ecology Laboratory operates in multi-investigator and multi-disciplinary teams bringing to bear on each research problem a wide range of scientific expertise. The four areas are: Advanced Analytical Center for Environmental Sciences; Ecological Stewardship; Ecotoxicology, Remediation, and Risk Assessment; and Radioecology. The Savannah River Ecology Laboratory studies are generating information leading to faster, better, and cheaper alternatives for environmental cleanup at the Savannah River Site. Outreach and education programs communicate effectively with our stakeholders and reach more than 70,000 people a year, as well as training professionals and students throughout the United States.

Continue the Savannah River Ecology Laboratory research efforts on the restoration and remediation of the Savannah River Site.

Continue programs of environmental chemistry/hydrogeochemistry to understand contaminant behavior in the environment, elucidate molecular mechanisms of toxicity, and develop cheaper and more environmentally sound remediation approaches.

Continue work with scientists from the DOE complex to explore new approaches to land use and ecological risk assessment.

Continue research on certain bioindicators as a way for assessing risks.

Continue work on the genetic changes in response to site operations.

SR-DO05 / DOE External Program Support 7,348 5,530 3,530

Funding is provided to the South Carolina Department of Health and Environmental Control for oversight of the Savannah River Operations Office activities to be carried out under the Federal Facilities Agreement.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Continue interagency agreement with the United States Forestry Service to perform cap maintenance, in support of the environmental restoration program.
- # Continue funding the States of South Carolina and Georgia for emergency preparedness programs and oversight of environmental monitoring activities.
- # Provide reimbursement to the State of South Carolina for program management costs associated with the Savannah River Site Federal Facility Agreement.
- # Funding for grants provided to Historically Black Colleges and Universities, South Carolina Universities Research and Education Foundation, and the Education, Research and Development Association of Georgia Universities to support the Savannah River Site environmental restoration program.

SR-DO07 / DOE Program Support 15,204 11,231 8,231

The overall purpose of this project is to enlist offsite resources to independently verify site characteristics and create a culture of public trust and confidence within surrounding communities which enables the Savannah River Site to continue environmental restoration and waste management missions. Program support will be provided for payment-in-lieu-of-taxes, Historically Black Colleges and Universities, Massie Chair, South Carolina Water Resources Commission, South Carolina Universities and Research and Education Foundation, Medical University of South Carolina, and interagency agreements. This program also supports the operation and maintenance of a public reading room, which houses documents relative to the Savannah River Site, Defense Nuclear Facilities Safety Board.

- # Environmental Impact Statements; Payments in Lieu of Taxes; U.S. Geological Survey - required to monitor flow of the site's wastewater effluents and streams; Savannah River Archaeological Research Program - required to protect and manage the Savannah River Site archaeological resources; Natural Resources Conversation Service - established to address site soil and water management problems before they become regulatory compliance issues; National Environmental Training Office - in direct support of the Defense Nuclear Facilities Safety Board Recommendations 93-3, 92-7 and 95-2; and other mission essential management functions which include: Corps of Engineers, Oak Ridge Institute for Science and Education for training, Lab Transfers, South Carolina Universities Research and Education Foundation, South Carolina Department of Natural Resources, University of South Carolina Water Research, and Massie Chair of Excellence.

Key Milestones

- # Issue the Savannah River Site Integrated Infrastructure Program Plan (April 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Issue a report delineating the Savannah River Site reconfiguration decision and path forward for the A-Area and the Savannah River Technology Center (August 2001).

SR-ER01 / Flood Plain Swamp Project 4,948 9,364 2,130

The Flood Plain Swamp Watershed project is one of six geographical divisions of the Savannah River Site for the purpose of implementing the Federal Facility Agreement. The Flood Plain Swamp Watershed Project contains three primary areas: the D-Area, TNX Area, and the West M-Area. Portions of the D-Area were used from the mid-1950's through the mid-1980's for disposal of coal ash, oil, chemicals, and general debris. The TNX was also operated during the same time-frame for the purpose of conducting pilot tests to support the Savannah River Site activities and operations. Portions of the West M-Area were used for disposal of waste before government control of the site and for disposal of general debris after the site started operations.

Remediation of the Flood Plain Swamp Watershed project will consist of the following:

- < Preliminary evaluation of known suspect areas to determine if action is necessary;
- < Investigation and analysis of the identified waste units and any suspect areas identified through preliminary assessments;
- < Evaluations to determine further investigation and possible required remediation;
- < Implementation of remediation technologies to mitigate the impact of contaminants of concern on human health and the environment; and
- < Post-action monitoring to ensure that the implemented technology was effective.

Release Sites: Continue five assessments and one remedial action.

Continue remediation at TNX operable unit and D-Area Oil Seepage Basin (groundwater monitoring).

SR-ER02 / Four Mile Branch Project 35,543 34,830 12,000

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Four Mile Branch Watershed project is one of six geographical divisions of the Savannah River Site for the purpose of implementing the Federal Facility Agreement. The Four Mile Branch Watershed project contains sites in five areas: the E-Area, C-Area, N-Area, F-Area, and the H-Area. The E-Area consists of several adjacent facilities that were former or are current disposal sites for hazardous and radioactive wastes and spent solvent generated from plant processes. The C-Area consists of several facilities that were former disposal sites for hazardous and/or radioactive wastes and spent solvents generated from the operation of the C-Reactor Facilities. The N-Area consists of two burning/rubble pits that were used between 1951 and 1973 for the disposal of various waste materials including hazardous substances like organic chemicals of unknown use and origin. The F- and H-Areas consist of several former or current disposal, storage, or treatment facilities for hazardous and radioactive wastes and materials, and spent solvents from the F- and H-Area plant processes.

Remediation of the Four Mile Branch Watershed project will consist of the following:

- < Preliminary evaluation of suspect areas to determine if action is necessary;
- < Preliminary investigation and analysis of identified waste units and any suspect areas identified through preliminary evaluations to determine further investigation and possible required remediation;
- < Implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment;
- < Analysis of the impact on the watershed; and
- < Post-action monitoring to ensure that the implemented technology was effective.

Projects in remediation are F- and H-Inactive Process Sewer Lines, Burial Ground Complex, and Mixed Waste Management Facility Groundwater.

Release Sites: Continue seven assessments and five remedial actions.

Metrics			
Release Site			
Cleanup	2	2	2
Key Milestones			
# Implement Mixed Waste Management Facility interim measures (March 2001).			

SR-ER03 / Lower Three Runs and Operations Project	**29,280**	**31,050**	**15,000**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Lower Three Runs and Operations project is one of six geographical divisions of the Savannah River Site for the purposes of implementing the Federal Facility Agreement. The Lower Three Runs and Operations project comprises two areas: R-Area and P-Area and Bingham Pump Outage Pits in R-, L-, P-, and K-Reactor Areas. Past disposal practices associated with historical reactor operations have produced waste units within the K-, P-, and R-Reactor Areas. Monitoring well data collected from the P- and R-Reactor Areas indicate the groundwater is contaminated with tritium, chlorinated volatile organics, other radionuclides, heavy metals, and sulfate.

Remediation of the Lower Three Runs Watershed project in accordance with the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act will decrease human and environmental risks to acceptable levels. The Lower Three Runs Watershed project will require remediation of primary source material, affected soils, affected surface water pathways, and affected groundwater. Remediation of the Lower Three Runs Watershed project will consist of: preliminary evaluation of suspect areas to determine if action is necessary, preliminary investigation and analysis of identified waste units and any suspect areas identified through preliminary evaluations, implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment, analysis of the impact on the watershed, and post-action monitoring to ensure that the implemented technology was effective.

- # Activate six waste site operable units that will be undergoing either assessment (three operable units) or remediation (three operable units).
- # Release Sites - Continue one assessment and one remedial action.

Metrics			
Release Site			
Cleanup	8	0	0
Key Milestones			
# R-Area Burning Rubble Pits, (132-R,-1R) and Ruble Pile (631-25G) Field Start (June 2001).			

(dollars in thousands)

FY 2000	FY 2001	FY 2002

SR-ER04 / Pen Branch Project 9,929 7,934 2,900

The Pen Branch Watershed project is one of six geographical divisions of the Savannah River Site for the purpose of implementing the Federal Facility Agreement. The Pen Branch Watershed Project comprises several areas; Central Shops, G-Area, K-Area, and L-Area.

Remediation of the Pen Branch Watershed project in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act will decrease human and environmental risks to acceptable levels. The Pen Branch Watershed project will require remediation of primary source material, affected soils, affected surface water pathways, and affected groundwater. Remediation of the Pen Branch Watershed project will consist of preliminary evaluation of suspect areas to determine if action is necessary, preliminary investigation and analysis of identified waste units and any suspect areas identified through preliminary evaluations, implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment, analysis of the impact on the watershed, and post-action monitoring to ensure that the implemented technology was effective.

Release Sites - Continue one assessment and four remedial actions.

Metrics			
Release Site			
Cleanup	0	0	2

SR-ER05 / Steel Creek Project 4,535 3,214 2,000

The Steel Creek Watershed project is one of six geographical divisions of the Savannah River Site for the purpose of implementing the Federal Facility Agreement. The Steel Creek Watershed Project comprises two areas: L-Area and P-Area.

Remediation of the Steel Creek Watershed project in accordance with Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act will decrease human and environmental risks to acceptable levels. The Steel Creek Watershed project will require remediation of primary source material, affected soils, affected surface water pathways, and affected groundwater. Remediation of the Steel Creek Watershed project will consist of preliminary evaluation of suspect areas to determine if action is necessary, preliminary investigation and analysis of identified waste units and any suspect areas identified through preliminary evaluations implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment, analysis of the impact on the watershed, and post-action monitoring to ensure that the implemented technology was effective.

Remediation of the Steel Creek Watershed project will consist of the following:

< Preliminary evaluation of suspect areas to determine if action is necessary;

- < Investigation and analysis of the identified waste units and any suspect areas identified through preliminary evaluations to determine further investigation and possible required remediation; and
- < Implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment, and post-action monitoring to ensure that the implemented technology was effective.

Three other waste site operable unites will be undergoing assessments and remediation.

Release Sites: Continue one assessment and two remedial actions.

Metrics			
Release Site			
Cleanup	0	0	1

SR-ER06 / Upper Three Runs Project 20,248 21,953 7,500

The Upper Three Runs Watershed project is one of six geographical divisions of the Savannah River Site for the purpose of implementing the Federal Facility Agreement. The Upper Three Runs Watershed Project contains five primary Savannah River Site operational areas, in part or in whole: A/M-Area, B-Area, E-Area, F-Area, and the H-Area.

Remediation of the Upper Three Runs Watershed project in accordance with the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act will decrease human and environmental risks to acceptable levels. The Upper Three Runs Watershed Project will require remediation of primary source material, affected soils, affected surface water pathways, and affected groundwater. Remediation of the Upper Three Runs Watershed project will consist of: preliminary evaluation of suspect areas to determine if action is necessary, preliminary investigation and analysis of identified waste units and any suspect areas identified through preliminary evaluations, implementation of remediation technologies to mitigate the impact of contaminants of concern to human health and the environment, analysis of the impact on the watershed, and post-action monitoring to ensure that the implemented technology was effective.

Continue remediation at A/M Groundwater, Non-Rad Disposal Facility Groundwater, Met Laboratory, Miscellaneous Chemical Basin and A-Area Burning Rubble Pit.

Metrics			
Release Site			
Cleanup	7	4	0
Key Milestones			

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Savannah River Laboratory Seepage Basin (904-51G1, 53G2, 54G, 55G) remedial action start (February 2001).

SR-ER07 / Program Management 9,025 8,751 5,000

The purpose of the Environmental Restoration Program Management project is to provide oversight of the operational project watersheds and provide programmatic development. The program is also responsible to ensure that the environment, human health and safety are protected by meeting the prescribed standards derived from Federal, state, and local requirements, and internal Department of Energy requirements. Programmatic support is essential to the Savannah River Site's environmental restoration program.

The following global support activities are found in this project: Safety and Health, Environmental Compliance, Program Analysis and Controls, Estimating Support, and Environmental Restoration quality assurance. Planning support and oversight is also provided to monitor and measure the total Savannah River Site's environmental restoration program performance.

Programmatic development is crosscutting, strategic initiatives that support the Environmental Restoration Division. The objectives are to lead strategic planning and integration, coordinate external visibility, develop performance measures, and manage program improvements.

Continue to support: Environmental Restoration Quality Assurance program, Safety and Health program, life-cycle cost estimate and program analysis, Environmental Compliance program, and administration training.

SR-FA02 / F-Canyon Deactivation Project 77 0 0

The F-Canyon deactivation project provided a methodology whereby a facility interim end state is reached ensuring the safety of workers, the public, and the environment while effectively reducing the costs associated with the surveillance and maintenance of surplus facilities while preparing the facility for turnover for eventual disposition. The work scope, cost and schedule has been transferred to SR-FA32 (F-Area Chemical Processing Facilities Disposition) effective in FY 2002.

No activity in FY 2002.

SR-FA16 / F-Area Monitoring 72 689 0

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The F-Area Monitoring project supports maintaining facilities that have been deactivated in a cost-effective minimum surveillance and maintenance state pending decisions and implementation of final decontamination and decommissioning. The former Naval Fuels Facility, Building 247-F, and associated support facilities, is the only facility that has, and is projected, to undergo deactivation prior to the F-Canyon/FB-Line mission completion. The deactivated state allows minimum surveillance and maintenance actions to maintain safety, health, and environmental requirements. Deactivated facilities are monitored and inspected quarterly to ensure safe conditions are maintained.

The work scope and schedule for this project has been transferred to SR-FA26 (Long-Term Stewardship).

No activity in FY 2002.

SR-FA18 / M-Area Monitoring Project 8,346 8,490 0

This project covers surveillance and maintenance during pre-deactivation, and deactivation phases in the M-Area. The scope, schedule and cost associated with the project have been transferred to SR-FA27 (M-Area Disposition) effective in FY 2002 and outyears.

No activity in FY 2002.

Metrics			
Facilities Deactivation During Period	0	2	0

SR-FA19 / D-Area Monitoring Project 786 320 0

This project covers surveillance and maintenance activities for surplus facilities in D-Area. Scope, schedule, and cost associated with this project have been transferred to SR-FA31 (D-Area Disposition) effective in FY 2002 and outyears.

No activity in FY 2002.

SR-FA20 / Reactors Monitoring Project 12,759 7,877 0

The P-, C-, and R-Reactors were formerly used to irradiate target materials for tritium and plutonium production. Operations for all reactors have ceased and each was placed in a cold shutdown mode with no provision for restart.

During the transition of these facilities from operational status to interim long-term monitoring, there is a need to maintain an appropriate level of surveillance and maintenance.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The workscope and schedule for this project has been transferred to SR-FA28 (P, C, and R-Reactor Areas Disposition) effective FY 2002.

No activity.

SR-FA23 / Landlord Facilities Disposition 3,384 4,506 3,131

Planned activities in FY 2002 include: performing risk mitigation program activities (Inactive Facility Assessments, Risk Mitigation in inactive facilities, continuing the Memorandum of Understanding Process for Transfer of Facilities and implementing the Assessment Management Plan); and the deinventory of the F-Area Warehouse (F-Area Support Facilities Grouping).

SR-FA26 / Long-Term Stewardship 0 0 182

Facility disposition is an emerging program at the Savannah River Site; work scopes are understood in broad terms rather than as specific project end points. Detailed disposition plans for the facility groupings transitioning to long-term monitoring do not currently exist and will be developed in the future. Current strategy at the Savannah River Site for disposition includes: Deactivate processing and administrative facilities and prepare them for low-cost, long-term surveillance and maintenance; Final end states for these facilities have not been determined. Therefore, the scope of this PBS does not include the decommissioning or any alternative activity that places these facilities in a final end state.

Begin long-term monitoring in phases. Includes monitoring of the 247-F facility.

SR-FA27 / M-Area Disposition 0 0 7,661

Continue surveillance and maintenance in M-Area. Continue 321-M (manufacturing building) demolition and removal, begin deinventory and deactivation of 330 / 331-M (slug and core storage warehouses), and continue deactivation of 340-M (Waste Treatment Facility), decontaminate assets in 313-M (canning building), and demolition and removal 704-4M guardhouse. The work scope and schedule for this project was previously supported in PBS SR-FA18 (M-Area Monitoring Project).

SR-FA28 / P, C, R Reactor Areas Disposition 0 0 8,731

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Support surveillance and maintenance, C-Area Administration, decontamination facility operations, continuing C-Reactor roof repairs, continuing the deinventory of 608-P (change facility), begin cleaning P-Reactor Basin Water with SELION technology and perform R-Reactor Basin disposition planning. The work scope and schedule for this project was previously supported in PBS SR-FA20 (Reactors Monitoring Project), SR-FA08 (P-Reactor Deactivation); SR-FA02 (C-Reactor Deactivation) and SR-FA10 (R-Reactor Deactivation).

SR-FA31 / D-Area Disposition 0 0 605

Support surveillance and maintenance activities and D-Area hazardous energy sources isolation. The workscope schedule for this project was previously supported in PBS SR-FA19 (D-Area Monitoring Project) and SR-FA14 (D-Area Deactivation).

SR-FA35 / Research and Demonstration Facilities 0 0 490

Surveillance and maintenance activities and limited deactivation at the TNX facility are planned for FY 2002.

SR-HL01 / H-Tank Farm 92,427 94,384 90,732

The purpose of the H-Tank Farm Facility is to safely store and manage an inventory of approximately 23 million gallons (270 million curies) of liquid high-level radioactive waste in 23 underground storage tanks. This waste has accumulated from nuclear material production operations at the Savannah River Site. The main long-lived radioactive constituents of this waste are Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, and Plutonium-241. Management of this waste involves 24-hour surveillance, maintenance, monitoring, inspection, sampling, operation of the 2H and the Replacement High-Level Waste Evaporator (3H) evaporator systems (to reduce waste volume), and transfers between tanks and other facilities.

- # Continue safe management of existing and new inventory of waste including receipt, evaporation, storage, and transfers.
- # Evaporate an estimated 2,400,000 gallons of liquid high-level waste via the new Replacement High-Level Waste Evaporator (3H) and the existing evaporator (2H) in FY 2002.

Key Milestones

- # Resolve the solids accumulation issues and return 2-H evaporator to service (June 2001).
- # Provide 3.0 million gallons of evaporator overheads (F and H Tank Farms) (September 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Provide 3.0 million gallons of evaporator overheads (F and H Tank Farms) (September 2002).

SR-HL02 / F-Tank Farm 59,659 60,138 63,207

The purpose of the F-Tank Farm Facility is to safely store and manage an inventory of approximately 15,000,000 gallons (140 million curies) of liquid high-level radioactive waste in 20 underground storage tanks. This waste has accumulated from nuclear material production operations at the Savannah River Site. The main long-lived radioactive constituents of this waste are Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, and Plutonium-241. Management of this waste involves 24-hour surveillance, maintenance, monitoring, inspection, sampling, operation of the 2F evaporator system (to reduce waste volume), and transfers between tanks and other facilities.

Continue safe management of existing and additional new inventory of waste including receipt, evaporation, storage, and transfer.

Evaporate an estimated 600,000 gallons of liquid high-level waste via the 2-F Evaporator in FY 2002.

SR-HL03 / Waste Removal Operations and Tank Closure 4,539 3,547 3,547

This project involves removing the high-level radioactive waste from the H- and F-Area underground waste storage tanks and transferring it to the Waste Pretreatment Facility for processing. As the tanks are emptied of waste, this project also physically isolates the emptied tanks, fills them with grout, and transitions them into a low surveillance and maintenance mode. Activities include operation of slurry pumps and transfer jets to re-dissolve precipitated waste salts and suspend insoluble waste solids; demonstrating new salt removal technologies; and operationally closing tanks. Work is done remotely or with shielding due to the intense radiation fields.

Initiate slurrying of sludge in Tank 7 in preparation for transfer to the Waste Pretreatment Facility for sludge washing.

Continue bulk waste removal in Tank 18.

SR-HL04 / Waste Pretreatment 54,273 51,734 51,734

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The purpose of the Waste Pretreatment Facility is pretreatment of high-level radioactive waste to enable final processing at the Defense Waste Processing Facility into a safe stable form for long-term storage/ disposal. This waste has accumulated from nuclear material production operations at the Savannah River Site. The main long-lived radioactive constituents of this waste are Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, and Plutonium-241. The Waste Pretreatment Facility pretreats the sludge portion of tank waste to be processed at Defense Waste Processing Facility by reducing the aluminum and soluble salt content through an aluminum dissolution step and multiple washing cycles.

- Continue safe management of existing inventory including storage and transfers.
- Continue feeding Sludge Batch 2 to the Defense Waste Processing Facility.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Key Milestones
Return Tank 49 to high-level waste service (July 2001).

SR-HL05 / Vitrification 114,208 110,639 110,639

The Defense Waste Processing Facility receives pretreated, high level radioactive waste from waste pretreatment and eventually from the salt processing facility and converts it, in a process called vitrification, to a stable form for safe long-term disposal. Vitrification is a highly complex process in which liquid high level radioactive waste is mixed with glass frit, heated to 2100 degrees F to form molten glass, and poured into stainless steel canisters. When cooled, the waste has been immobilized within the glass structure and will not dissolve or leach out to the environment. Stringent quality controls insure the glass meets Federal Repository specifications. All the Defense Waste Processing Facility work is done remotely or with shielding due to the intense radiation fields. Filled canisters are stored onsite pending shipment to a Federal Repository.

- # Continue operations and canister production.
- # Timing of an actual melter replacement outage may vary depending upon facility conditions, but is expected to occur in either FY 2002 or FY 2003.
- # The Defense Waste Processing Facility will be processing to maintain an overall average 200 canister per year production rate during this time period.
- # Continue development of the replacement Distributed Control System planned to be installed in FY 2004. (Note: This Distributed Control System replacement will also require an outage of approximately six months.)
- # Initiate project to build Failed Equipment Storage Vaults 3 and 4.

Metrics			
High-Level Waste			
Canisters Produced (canisters)	231	220	150

Key Milestones
Produce 220 canisters of vitrified high-level waste in FY 2001 (September 2001).
Produce 150 canisters of vitrified high-level waste in FY 2002 (September 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

SR-HL06 / Glass Waste Storage 647 684 684

The Glass Waste Storage Building receives filled radioactive waste canisters from the Defense Waste Processing Facility and stores them temporarily in shielded, below grade, storage sites pending shipment to a Federal Repository (scheduled to open in FY 2010). The Glass Waste Storage Building activities include 24-hour surveillance, maintenance, operation, monitoring, and inspection of the highly radioactive glass canisters currently being stored in the Glass Waste Storage Building #1, including operation and maintenance of forced air ventilation systems, radiation monitors and temperature sensors. The Glass Waste Storage Building #1, which will hold 2,159 canisters, is scheduled to be filled in FY 2007, by which time the Glass Waste Storage Building #2 must be designed, constructed, and ready to receive canisters.

Store all canisters produced in FY 2002 and previous years in the Glass Waste Storage Building #1.

SR-HL07 / Effluent Treatment Facility 15,268 15,138 15,138

The Effluent Treatment Facility collects, treats and discharges radioactively and chemically contaminated wastewater. The facility process splits the influent wastewater into two streams; the high volume "treated effluent" stream and the low volume "waste concentrate" stream.

The Effluent Treatment Facility treatment plant decontaminates the influent wastewater through a series of steps consisting of pH adjustment, sub micron filtration, heavy metal ion exchange, activated carbon organic removal, reverse osmosis, and polishing ion exchange. After the treatment, the effluent is analyzed and released to the environment through a National Pollution Discharge Elimination System permitted outfall.

Process approximately 18,000,000 gallons of waste water (depending on influent feed).

Complete the Distributed Control System Upgrade project.

SR-HL08 / Saltstone 683 976 976

The production facility operates under a permit issued by the South Carolina Department of Health and Environmental Control as an industrial waste landfill. The Saltstone Facility is designed to immobilize and dispose of salt solution waste containing low-levels of radioactivity. This facility can process up to 172,000,000 gallons of salt solution over the life of the facility, at a projected average rate of 4,000,000 gallons per year of non-hazardous waste disposal. Waste generating facilities (In-Tank Precipitation/Effluent Treatment Facility) pump salt solution from a tank to Z-Area through an underground pipeline into the Salt Solution Holding Tank. The salt solution is combined with cement, slag, and flyash to form non-hazardous saltstone grout. The grout is pumped into concrete vaults, where it cures and hardens into non-hazardous solid monolith.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Continue lay-up until the Salt Processing Facility start-up and/or Tank 50 processing requirements are needed.

SR-HL12 / High-Level Waste Removal 23,759 32,137 10,000

This project is twofold: 1) to perform the capital improvements necessary to enable the high-level waste system to maximize canister production given the current scientific understanding to process chemistry; and 2) to ensure a continuous supply of pre-treated sludge and salt precipitate feed to the Defense Waste Processing Facility. The project will enable the Defense Waste Processing Facility to process sludge feed and upon selection of a salt pre-treatment alternative, to process the resultant concentrate stream. Additionally, it will provide facility modifications to replace aging service piping and other service utilities on the H-Tank Farm East Hill, install waste removal equipment for all high-level waste tanks, and modifications required to return Tank 50 to waste storage service.

Complete installation of waste removal equipment on Tanks 7 and 18.

Initiate design for East Hill Piping Upgrades in H-Tank Farm.

Continue modifications required to return Tank 50 to waste storage service.

These funding levels include line-item construction funding of $15,487,000 in FY 2000; $27,153,000 in FY 2001; and $6,754,000 in FY 2002.

Key Milestones
Complete installation of waste removal equipment on Tank 7 (September 2001).

SR-HL13 / Salt Disposition 13,679 21,141 31,263

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The purpose of this activity is to select, design, construct, and start up the necessary facilities to prepare and treat the salt waste material for processing in the Defense Waste Processing Facility. The In-Tank Processing Facility was discontinued in January 1998 due to the decomposition of the product material and very high levels of benzene created by this decomposition. A systems engineering team was formed to study all possible alternatives. This resulted in a recommendation to pursue three options leading to a final selection of a process. Final alternatives are ion exchange, small tank precipitation and caustic side solvent extraction. Research is also being conducted on optimization of strontium and actinide removal. A Supplemental Environmental Impact Statement will be prepared concurrent with research and development of alternatives. The Savannah River Technology Center, along with national laboratories and universities, are conducting research and development on three processes. The research and development supports a June 2001 technology selection by implementing recommendations by DOE/Savannah River, the Independent Project Evaluation Team and the National Academics of Science.

Upon selection of a separation technology, a pilot plant will be designed, built, and operated in parallel with conceptual design of the full scale Salt Processing Facility. Lab-scale research and development will continue as needed on the selected technology and one backup. Conceptual design of the full-scale facility will be started in FY 2002 utilizing up to two competitively selected contractors. Experience gained through operation of the pilot plant will be used in completing the full scale facility preliminary design. The pilot plant will significantly contribute to the establishment of the full scale facility baseline at the conclusion of preliminary design.

- # Continue research and development of alternatives to support the salt processing project.
- # Design and start construction of a salt processing pilot plant facility for separation of actinides, strontium, and cesium from the high-level waste stream (02-EXP).
- # Initiate conceptual design for the full-scale Salt Processing Plant (2 concepts).

Key Milestones

- # Issue final Request for Proposal for the Salt Processing Pilot Plant (June 2001).
- # Start the Salt Processing Pilot Plant conceptual design (June 2001).

SR-IN11 / Infrastructure Line-Item 568 148 0

This activity encompasses up-front planning, design, and budget determinations and documentation required to support future infrastructure capital projects, and the funding needed to execute capital projects underway. This project serves a dual function:

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- < To plan, budget, and fund line-item preconceptual and conceptual design activities. These activities are typically started at least three years in advance of actual start of a construction line-item project.
- < A collection point to reflect outyear costs projected in planning space for line-items that are at least one year past the budget year. For example, in this budget submission, the Total Project Costs for construction line-item projects projected to start in FY 2000 and beyond are collected in this project.

No activity.

SR-IN12 / Operating Projects 21,972 17,433 17,433

Responsibility for these functions is associated with the general concept of "landlord" functions which are necessary for the general operation of the site, as well as for the care of the site's shared infrastructure components such as bridges, roads, and support activities that have been centralized for cost effectiveness. This activity encompasses infrastructure support for the Department of Energy, United States Forestry Service, Savannah River Ecological Laboratory, and Wackenhut Services, Inc. Services provided are in the nature of landlord support and are directly necessary for the safe and effective operation of these organizations and for the performance of their activities.

Operational activities include all site baseline activities necessary to operate the site infrastructure program including the following:

- < Reimbursed work for United States Forestry Service in support of Savannah River land management.
- < Capital equipment projects for the purchase and installation of new equipment or upgrades to replace obsolete equipment to support Priority I: safe storage of nuclear materials; regulatory requirements and commitments, and Priority 2: support of mission critical operations.
- < General Plant Projects for the design (excluding conceptual), construction, installation or other acquisition of land, property rights, buildings, structures, utility lines, roads or facilities necessary to reduce or eliminate health, fire, safety, and security problems in support of general site infrastructure and the overall site mission consistent with the Department of Energy requirements.

Procure and install capital equipment/general plant projects for landlord facilities and operations.

SR-IN18 / Steam Systems Upgrade 0 0 1,200

The Savannah River Site steam system supplies steam for use by administrative and process facilities for space heating, domestic water heating, and process steam requirements. The system consists of powerhouses, package boilers, and above ground steam lines.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The D-Area powerhouse is a large co-generation facility consisting of four field-erected 330,000 pound per hour, pulverized coal-fired boilers and seven turbine generator units having a total generating capacity of about 70 MW. South Carolina Electric and Gas Company operates and maintains the D-Area powerhouse under the terms of the steam supply contract, and dispatches all of the plant's generation as a part of South Carolina Electric and Gas Company's system. No power generation produced by the plant is supplied directly to the Savannah River Site.

The D-Area powerhouse is expected to be shut down by the end of the South Carolina Electric and Gas Company contract (October 2005) for steam supply. A previous study for upgrades needed to maintain the D-Area powerhouse estimated the capital cost of upgrades to be in excess of $57,000,000.

Continue design studies and other work in preparation for the steam systems upgrade project (FY 2003).

SR-SF01-LT / K-Area Spent Nuclear Fuel Project 27,749 32,286 32,286

The K-Area Spent Nuclear Fuel project provides basin storage of the Savannah River Site spent nuclear fuel awaiting stabilization, as well as storage for heavy water and nuclear materials awaiting disposition. The K-Area also serves as an administrative and operational support location for all spent nuclear fuel storage activities.

Interim storage of special nuclear material from the Department of Energy Rocky Flats Field Office was added to the scope of the K-Area project. With the addition of this mission, the K-Area will not be available for deactivation in FY 2002 as previously planned. Storage of Rocky Flats special nuclear material is scheduled to continue until FY 2012. This change in mission required this Project Baseline Summary to be moved, from the Site/Project Completion account to the Post 2006 Completion account in FY 2000.

Continue surveillance and maintenance of the Reactor Building and basin operation activities.

Complete plutonium receipts from Rocky Flats to the K-Area Nuclear Material Storage Modification subproject.

Continue plutonium surveillance and maintenance.

Continue the Defense Nuclear Facilities Safety Board Recommendation 94-1 shipments/2000-1 from the K-Basin.

Continue storage of highly enriched uranium and hazardous waste.

SR-SF02 / L-Area Spent Nuclear Fuel Project 36,128 27,101 27,101

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This project includes all programmatic and physical support efforts related to safe receipt and storage of spent nuclear fuel; Defense Nuclear Facilities Safety Board Recommendation 94-1/2000-1 shipments of irradiated fuel to H-Canyon; and L-Area Basin Operations and surveillance and maintenance activities. With the assumption that the Treatment and Storage Facility will be located in the 105-L Building, L-Disassembly Basin will receive offsite cask shipments, unload the casks, inspect, and prepare fuel for storage. Mk16 spent nuclear fuel in L-Basin will be transferred to H-Canyon for processing beginning in 2nd Quarter FY 2003 and completed by the end of 1st Quarter FY 2004. The spent nuclear fuel will be transferred from L-Basin to the Treatment and Storage Facility when it is ready for operation.

- # Continue surveillance and maintenance and basin operation activities.
- # Receipt of Foreign Research Reactor and Domestic Research Reactor fuel in the L-Basin - 33 casks of Foreign Research Rector; 21 casks of Domestic Research Reactor projected will continue.
- # Receiving Basin for Off-site Fuels to L-Basin transfers - 19 shipments of Mk 18; 4 shipments of Stainless Steel Clad spent nuclear fuel.
- # Continue the spent nuclear fuel integration activities.
- # Continue the Dam Restoration program.
- # In addition to this funding, the Department's Cost of Work for Others Program will include $9,700,000 in FY 2000, $14,500,000 in FY 2001, and $14,800,000 in FY 2002.

SR-SF03 / RBOF Spent Nuclear Fuel Project 14,365 14,975 13,747

The Receiving Basin for Offsite Fuels project scope includes basin operations in the Receiving Basin for Offsite Fuels to control the water quality where fuel rods are stored, reactor deionizer regeneration, and all activities that apply to fuel receipt, handling, storage, and shipping to other facilities. Onsite shipments from the Receiving Basin for Offsite Fuels to the L-Basin will take place, with deinventory of the Receiving Basin for Offsite Fuels Facility planned to be completed in the year 2007, assuming that the additional storage racks are installed in L-Area. Basin management and surveillance and maintenance activities will continue until deinventory is complete.

- # Continue Receiving Basin for Offsite Fuels surveillance and maintenance activities.
- # The Deionizer Resin Regeneration Facility continues to service deionizers for all the Savannah River Site spent nuclear fuel storage basins.
- # The Receiving Basin for Offsite Fuel staff maintained at two shift/four days per week coverage with fuel handling capability only on day shift.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Shipments of the Receiving Basin for Offsite Fuel inventory of aluminum clad spent nuclear fuel from Receiving Basin for Offsite Fuel to L-Reactor disassembly basin will be made as additional fuel storage racks are available in L-Reactor disassembly basin.
- # Shipments of table 5.2.1 fuel and miscellaneous fuels from Receiving Basin for Offsite Fuel to H-Canyon will be made.
- # Shipments of Mk 18 targets to L-Disassembly Basin, projected to be 19 cask shipments, will be made.
- # Shipments of sterling Forest Oxide to H-Canyon, projected to be 17 cask shipments, will be made finishing this spent nuclear fuel shipping campaign.
- # Receive shipment of Mk 15 targets from K-Disassembly Basin for storage.
- # Begin repackaging stainless steel and zirconium clad spent nuclear fuel into bundles for transfer to L-Disassembly Basin.

SR-SF04-LT / Heavy Water D-Area 212 0 0

The Heavy Water Processing project provided for the consolidated storage of heavy water in the K-Reactor. The K-Reactor was previously modified to provide storage of 3,000 drums of heavy water.

The Heavy Water Processing project was included in the Site/Project Completion account with the cost of operations offset by heavy water sales revenue. Previously, heavy water rework and Dupont water operations in D-Area were scheduled to cease by December 2000. Recent events surrounding the sale of heavy water currently placed the Heavy Water program into the Post 2006 Completion account in FY 2000.

- # No activity.

SR-SF06-LT / Alternate Technology Project 4,411 4,350 4,000

Funding for the companion Treatment and Storage Facility project was eliminated in FY 2001 to allow time for the completion of research and development activities prior to project initiation. The L-Area Experimental Facility will be completed in FY 2001 and will operate in FY 2002 to demonstrate the technology using irradiated fuel. This will provide information to be used in the design of the Spent Nuclear Fuel Treatment and Storage Facility.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Conceptual Design funds, estimated to be $2,100,000, are needed to complete conceptual design for the Treatment and Storage Facility. Conceptual design funds totaling $1,500,000 were spent for the Treatment and Storage Facility in prior years resulting in a total estimate of $3,600,000 in conceptual design for this project. Conceptual Design funds were spent in FY 1997 and FY 1998 for the original project concept called the Treatment and Storage Services Facility, which was to be a new construction (Greenfield) facility. During FY 1997 the project efforts were directed to develop a conceptual design report and Request for Proposal to privatize the project. In FY 1998 the privatization effort was ended and later in the year conceptual design was started on the Treatment and Storage Facility to be constructed in L-Area and take advantage of existing facilities. In early FY 1999 work on the conceptual design was curtailed until the results from the technology demonstration L-Experimental Facility were available (expected to be FY 2002). No conceptual design funds were spent on this project in FY 2000 and FY 2001. Conceptual design funds in FY 2002 will resume the conceptual design effort and utilize some of the previous work to complete conceptual design for the Treatment and Storage Facility.

Additional activities include providing information to the DOE-Office of Civilian Radioactive Waste repository license application and continuing waste form performance testing.

Key Milestones
Complete construction of L Experimental Facility (September 2001).

SR-SF09 / Spent Nuclear Fuel Treatment and Storage 7,000 0 0

Plans are to resume the project in FY 2003 with initiation of the design on the construction project. The goal of the design only project is to provide a well established baseline for the construction project. The most current schedule for completion of the Alternate Technology project indicates an FY 2008 activity completion.

The Spent Nuclear Fuel Treatment and Storage Facility project requires new cask handling, fuel handling, treatment, and dry storage facilities that provide remote handling capabilities, hot cells, heavy lifting capabilities (cask handling), as well as space allowance for movement of bulky items (casks, canisters). Most of the functions are expected to be co-located in the 105-L Building in an integrated facility. Based upon information from the alternative technology development program and operation of the L-Area experimental facility, a melt and dilute treatment will be deployed to prepare fuel for repository disposal. The facility will be designed to have a 40-year life. The Treatment and Storage Facility is to provide for the melt/dilution and storage of domestic and foreign research reactor spent nuclear fuel assemblies currently in existing wet storage basins or expected to be received at the Savannah River Site over 40 years.

No activity planned.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

SR-SW01 / Consolidated Incinerator Facility 20,301 1,864 1,291

The Consolidated Incinerator Facility incinerates solids and liquids that are either hazardous, low-level radioactive, or mixed wastes. The Consolidated Incinerator Facility mission is to reduce the legacy waste inventory and treat newly generated waste for disposal to avoid a future legacy waste problem. The Consolidated Incinerator Facility has been specially engineered to treat any benzene waste generated from either the Defense Waste Processing Facility or a salt solution treatment process.

Alternate methods for processing the Purex waste streams will be evaluated.

Suspended operations in FY 2001 - FY 2003.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	633	0	0

SR-SW02 / Transuranic Waste Project 12,766 16,050 6,000

The Transuranic Waste Project safely stores, characterizes, treats (as required) and disposes of transuranic waste. With a current inventory of approximately 11,000 cubic meters and an expected generation of an additional 10,000 cubic meters through FY 2028, the Savannah River Site is working to: develop the infrastructure necessary to process the many different transuranic waste streams and containers; and segregate the non-transuranic waste and prepare transuranic waste for disposal in the Waste Isolation Pilot Plant. The Savannah River Site has been working toward improving the storage conditions of transuranic waste on-site, and developing the characterization and certification program to meet the Waste Isolation Pilot Plant disposal requirements.

The mission of the Transuranic Waste Project has been to receive and safely store transuranic waste packages generated at the Savannah River Site, and throughout the DOE complex. The Savannah River Site will receive transuranic waste from the Mound Site and will ship required volume off the Savannah River Site to the Waste Isolation Pilot Plant using Carlsbad's mobile vendors. With the opening of the Waste Isolation Pilot Plant, the focus has shifted to preparation for and transportation to this disposal facility located in Carlsbad, New Mexico. This effort includes: characterizing the waste and segregating out those categories of waste that may be disposed of in a more cost-effective manner; processing and/or treatment of those wastes not meeting the waste acceptance criteria; volume reducing and repackaging items to minimize transportation costs; ensuring that risks to the environment and to human health and safety posed by transuranic waste operations are either eliminated or maintained at acceptable levels; achieving cost effectiveness, through waste minimization and life-cycle optimization, for waste management strategies; and maintaining public confidence in the long-term plan and waste management practices for the site's transuranic wastes.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- Begin initial project scoping efforts for the design of a High Activity Transuranic Waste Facility (i.e., safety Category 2 facility).
- Continue facility equipment upgrades for a general plant project Low Activity Transuranic Waste Facility (i.e., safety Category 3 facility) and visual examination operations.
- Continue safe storage of retrievably-stored transuranic waste.
- Provide support to Carlsbad mobile vendor capability for characterization, certification, and shipment of transuranic waste to the Waste Isolation Pilot Plant.
- Receipt of transuranic waste from the Mound Site in support of site closure and twice the volume will be shipped to the Waste Isolation Pilot Plant off the Savannah River Site using Carlsbad's mobile vendors in accordance with the agreement with South Carolina.

Metrics			
Transuranic Waste			
Ship to the Waste Isolation Pilot Plant for Disposal (m^3)	0	103	600
Key Milestones			
# Receive certification for shipment of transuranic waste to the Waste Isolation Pilot Plant (February 2001).			
# Complete four shipments to the Waste Isolation Pilot Plant (September 2001).			

SR-SW03 / Mixed Low-Level Waste Project 3,973 8,789 3,973

The Mixed Low-Level Waste project encompasses those activities and resources required for the safe, environmentally sound operations of the solid waste mixed waste facilities. The key activities in the management of the various mixed waste streams are: storage, treatment (i.e., including any characterization activities required prior to treatment), and disposal.

This project includes the receipt of waste, interim storage, and onsite treatment or offsite treatment, and offsite disposal. Mixed waste receipt and storage activities include: receipt of newly generated waste; verification that the waste meets the facility's waste acceptance criteria; placement of the newly generated waste or legacy waste in storage; and surveillance and maintenance of the stored waste.

Waste treatment activities include: characterization of legacy waste or newly generated waste; sorting, segregating, repackaging or preparing for treatment, or treatment of the waste, in order to assure that the requirements of the Resource Conservation and Recovery Act and the Federal Facilities Compliance Act of 1992 are met.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Disposal activities include: identifying the most cost-effective and best technical location for disposal of various mixed wastes in inventory; and prior to off-site shipment and disposal, assuring the mixed waste or treatment residuals have been properly characterized, packaged, and prepared for shipment off-site for treatment and/or disposal.

- # Commence operation of the Mixed Waste Processing Facility (i.e., a General Plant Project) to prepare legacy waste for treatment.
- # Continue characterization and treatment of lead and debris waste.
- # Establish a treatment contract for Raschig Rings.
- # Continue limited off-site treatment and/or disposal of various mixed waste streams.
- # Renew/rebid an off-site disposal contract.
- # If alternative, off-site treatment options are found for incinerable waste streams, which were originally intended for treatment at the Consolidated Incineration Facility, additional funding will be required to support this scope; this budget does not support any offsite treatment for these waste streams.

Metrics			
Mixed Low-Level Waste			
Treatment (m^3)	0	168	45
Disposal (m^3)	0	285	100

SR-SW04 / Low-Level Waste Project 16,232 12,456 6,563

The various low-level waste streams at the Savannah River Site were and are generated from a variety of activities and waste generators across the site, including the tritium facilities, separations, reactors, high-level waste tank farms, reactor materials, solid waste, environmental restoration, and construction. Also, the Savannah River Site receives low-level waste from the Naval Reactors Program and other off-site generators for disposition.

The Low-Level Waste project encompasses those activities and resources required for the safe, environmentally sound operations of the Solid Waste Low-Level Waste facilities. The key activities in the management of the various low-level waste streams are: storage, treatment (i.e., including any characterization activities required prior to treatment), and disposal. The Low-Level Waste project is managed with a goal of eliminating legacy waste and maintaining the capability and capacity to treat/dispose of newly generated waste. This will be accomplished by identifying, and either developing or contracting, appropriate treatment and disposal technologies, where present capabilities are not adequate.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Low-level waste receipt and storage activities include: verifying that the waste meets the facility waste acceptance criteria; receipt of newly generated waste; and surveillance and maintenance of waste placed in storage. Treatment activities include: sorting and segregating newly generated and legacy waste; and volume reduction by compaction, as required. Disposal activities include: placement of the waste in the appropriate disposal repository (i.e., in vaults or trenches, or on pads); construction and operation of additional disposal capacity; and surveillance and maintenance of the various disposal units.

- # Continue treatment operations at the Waste Sort Facility and the Super Compactor Facility.
- # Continue onsite vault and trench disposal operations.
- # Perform upgrades to the super compactor.
- # Grout a piece of contaminated large equipment.
- # Continue offsite disposal of environmental restoration waste.
- # Continue performance assessment maintenance activities.

Metrics			
Low-Level Waste			
Disposal (m^3)	11,877	4,894	8,000

SR-SW05 / Hazardous Waste Project 5,660 3,337 3,337

The Hazardous Waste project encompasses three primary operations: receipt of waste from onsite generators, interim storage, and shipment of waste offsite for commercial treatment and disposal. In addition, it includes maintenance of the waste tracking system. Other operations that are equally important, and are conducted mainly at the generating facility, include waste minimization and pollution prevention.

- # Complete shipments of legacy land disposal restrictions hazardous waste.
- # Continue radiological characterization of pre-land disposal restrictions legacy waste, in order to determine if the waste is mixed or non-radioactive hazardous.
- # Continue to meet the land disposal restrictions requirements for newly generated waste by shipping offsite for treatment and disposal.

SR-SW06 / Sanitary Waste Project 989 1,047 1,047

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Sanitary Waste project provides for the safe, and environmentally sound sanitary waste disposal from the Savannah River Site, which produces approximately 25 tons of sanitary waste per day. Sanitary waste activities include: receipt of newly generated waste, recycling, and verification that the waste meets the commercial disposal facility waste acceptance criteria, radiological screening and contract administration. These activities are necessary to assure compliance with the South Carolina Solid Waste Regulation (i.e., R61-17.258) and DOE Order 435.1, Radioactive Waste Management.

The Savannah River Site and the Lower Savannah River Council of Governments have committed to the development and use of the Three Rivers Landfill, which disposes of waste from the Savannah River Site and eight South Carolina counties.

- # The Savannah River Site will continue to dispose of sanitary waste, and construction and demolition debris, at the Three Rivers Regional Landfill.
- # Waste minimization and pollution prevention activities will continue to be conducted on-site, and material will continue to be sent to the City of North Augusta Material Recovery Facility.

SR-SW07 / Pollution Prevention 1,276 1,563 0

The Pollution Prevention program provides the Savannah River Site with a safe, effective, and environmentally responsible strategy to implement specific waste and pollutant reduction goals. This strategy is based on current and projected information on waste generation, waste characterization, and ultimate waste disposal costs. In addition, pollution prevention is a major component of the Savannah River Site's International Standards Organization 140001 Certification Program for its Environmental Management system and integrated safety management system. Pollution Prevention is the Savannah River Site's preferred approach for reducing waste, mitigating health risks, and protecting the environment.

- # No activities planned.

Total, Savannah River 728,528 702,656 585,989

Explanation of Funding Changes from FY 2001 to FY 2002

FY 2002 vs. FY 2001 ($000)

SR-DO03 / Savannah River Natural Resource Management and Research Institute

	FY 2002 vs. FY 2001 ($000)
# Decrease in funding due to higher priority program activities.	-2,000
SR-DO04 / Ecology Lab Project	
# Decrease in funding due to higher priority program activities.	-2,000
SR-DO05 / DOE External Program Support	
# Decrease in funding due to higher priority program activities.	-2,000
SR-DO07 / DOE Program Support	
# Decrease in funding due to higher priority program activities.	-3,000
SR-ER01 / Flood Plain Swamp Project	
# Decrease in funding reflects reduced activities at D- and TNX Areas due to higher priority program activities.	-7,234
SR-ER02 / Four Mile Branch Project	
# Decrease in funding reflects reduced activity at the C-Area Reactor Seepage Basin due to higher priority program activities.	-22,830
SR-ER03 / Lower Three Runs and Operations Project	
# Decrease in funding reflects reduced groundwater monitoring and site evaluations due to higher priority program activities.	-16,050
SR-ER04 / Pen Branch Project	
# Decrease in funding reflects reductions at the K-Area Reactor Seepage Basin, Chemicals, Metals, and Pesticides Pits and the L-Area Burning Rubble Pits due to higher priority program activities.	-5,034
SR-ER05 / Steel Creek Project	
# Decrease in funding due to higher priority program activities.	-1,214
SR-ER06 / Upper Three Runs Project	
# Decrease in funding due to higher priority program activities.	-14,453
SR-ER07 / Program Management	
# Decrease in funding due to higher priority program activities.	-3,751
SR-FA16 / F-Area Monitoring	
# Decrease in funding due to project activity (247-F Facilities Monitoring) transferred to PBS SR-FA26 (Long-Term Stewardship) in FY 2002; no significant change in project activity.	-689
SR-FA18 / M-Area Monitoring Project	

	FY 2002 vs. FY 2001 ($000)
# Decrease in funding due to the scope, schedule, and cost being transferred to PBS SR-FA27 (M-Area Disposition).	-8,490
SR-FA19 / D-Area Monitoring Project	
# Decrease in funding due to the scope, schedule, and cost being transferred to PBS SR-FA31 (D-Area Disposition).	-320
SR-FA20 / Reactors Monitoring Project	
# Decrease in funding due to the scope, schedule, and cost being transferred to PBS SR-FA28 (P, C, and R-Reactor Areas Disposition).	-7,877
SR-FA23 / Landlord Facilities Disposition	
# Decrease in funding reflects the compliance of the 284-F Powerhouse project.	-1,375
SR-FA26 / Long-Term Stewardship	
# Increase in funding reflects transfer of activity from PBS SR-FA16, F-Area Monitoring, for preparation of disposition plans for facility groupings transitioning to long-term monitoring.	182
SR-FA27 / M-Area Disposition	
# Increase in funding reflects transfer of activity from PBS SR-FA18, M-Area Monitoring.	7,661
SR-FA28 / P, C, R-Reactor Areas Disposition	
# Increase in funding reflects transfer of activity from PBS SR-FA20, Reactors Monitoring Project.	8,731
SR-FA31 / D-Area Disposition	
# Increase in funding reflects transfer of activity from PBS SR-FA19, D-Area Monitoring Project.	605
SR-FA35 / Research and Demonstration Facilities	
# Increase in funding reflects transfer of activity for preparation of disposition plans for the Savannah River Technology Center and TNX project.	490
SR-HL01 / H-Tank Farm	
# Decrease in funding reflects completion of the 2H evaporator recovery. Authorization basis work is increased. Significant projected savings are incorporated.	-3,652
SR-HL02 / F-Tank Farm	
# Authorization basis studies to determine the safety requirements for operating the F-Tank Farm Facility are increased.	3,069
SR-HL12 / High-Level Waste Removal	

	FY 2002 vs. FY 2001 ($000)
# Decrease in funding is due to a deferral of work scope to support higher priority program activities.	-22,137
SR-HL13 / Salt Disposition	
# Increase in funding reflects initiation of the pilot plant design/construction, and of the full-scale facility conceptual design.	10,122
SR-IN11 / Infrastructure Line Item	
# Decrease in funding reflects a postponement of planning for future infrastructure needs.	-148
SR-IN18 / Steam System Upgrade	
# Increase in funding reflects initiation of design activities to support the Steam System Upgrade project.	1,200
SR-SF03 / RBOF Spent Nuclear Fuel Project	
# Decrease in funding reflects reduced inventory and receipt of research reactor fuel.	-1,228
SR-SF06-LT / Alternate Technology Project	
# Decrease in funding reflects funding of higher priority program activities.	-350
SR-SW01 / Consolidated Incinerator Facility	
# Decrease in funding reflects placement of the facility in cold standby with minimum surveillance and maintenance costs.	-573
SR-SW02 / Transuranic Waste Project	
# Decrease reflects funding of other higher priority program activities.	-10,050
SR-SW03 / Mixed Low-Level Waste Project	
# Decrease in funding reflects operation of the Mixed Waste Storage Facility and the Waste Processing Facility (general plant project), reduced offsite treatment and disposal activities, but defers treatment of wastes originally intended for treatment in the Consolidated Incineration Facility.	-4,816
SR-SW04 / Low-Level Waste Project	
# Decrease in funding reflects continued operation of the Waste Sort and Super Compactor Facilities, the vaults and trenches.	-5,893
SR-SW07 / Pollution Prevention	
# Decrease reflects funding of higher priority program activities.	-1,563
Total Funding Changes, Savannah River	-116,667

Multi-Site

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Multi-Site activities is to provide management and direction for various crosscutting EM and DOE initiatives, establish and implement national and departmental policy; and conduct analyses and integrate activities across the DOE complex. These activities provide the policy basis and foundation for sites to complete their mission. The activities also identify opportunities that result in cost savings from site baselines.

The funds requested in the Multi-Site activities defense account consist of Headquarters technical integration efforts which focus on assuring the disposition of waste and materials; support activities to transfer excess facilities into the EM program in a safe and cost-effective manner; complex-wide Pollution Prevention activities; Environmental and Regulatory Analysis activities; Emergency Preparedness (facility and transportation); and Transportation and Packaging activities. Other complex-wide support activities include Analytical Laboratory Management, training at DOE nuclear weapons facilities and related sites for hazardous waste operations, and limited maintenance of nuclear criticality safety expertise.

The Multi-Site budget allocation also funds the Uranium Enrichment Decontamination and Decommissioning Fund. The Federal Government deposit to the Uranium Enrichment Decontamination and Decommissioning Fund is required by the Energy Policy Act of 1992, which authorizes annual deposits into the Uranium Enrichment Decontamination and Decommissioning Fund of up to $480,000,000 annually adjusted for inflation. Domestic utilities are to be assessed up to $150,000,000 per year (adjusted for inflation) for 15 years based on their purchase of Department-produced separative work units. The remainder of the annual deposit, currently estimated at approximately $420,000,000 (in FY 2000, FY 2001, and FY 2002) was authorized to come from annual congressional appropriations.

Program Goal

The overall goal of the Multi-Site activities is to allow the Environmental Management program to better coordinate EM-wide and DOE-wide program efforts both within DOE and with stakeholders. Efforts supported by the Multi-Site account particularly avoid overlaps and inconsistencies amongst sites, thereby achieving a more efficient and cost-effective program. The Multi-Site activities provide complex-wide services and infrastructure, and promotes the sharing of knowledge and equipment/facilities across sites. This focus on integration between and within sites decreases cost and by accelerating cleanup, reduces risk. The following paragraphs provide an overview of the EM and DOE initiatives supported within the Multi-Site activities defense account.

The Multi-Site defense account funds many activities in the Office of Integration and Disposition. The mission of this office is to promote, enable, and expedite site closure and project completion by providing Multi-Site services throughout the complex. The office accomplishes its integration function by developing and implementing cross-cutting policy, planning and guidance, and by providing expert technical assistance for the EM program. In particular, the Multi-Site account provides funding for the four sub-offices within the Office of Integration and Disposition (Offices of Nuclear Material and Spent Fuel, Technical Program Integration, the Waste Isolation Pilot Plant Office, and Transportation), as well as the Nuclear Criticality Safety Training, Pollution Prevention, Transportation Emergency Preparedness, and Transportation and Packaging Management national programs.

The purpose of the Office of Nuclear Material and Spent Fuel is to integrate DOE's nuclear materials stewardship activities to achieve safe, interim storage of surplus nuclear materials and spent nuclear fuels, as well as identify and implement options for the final disposition of these materials. The office identifies locations for consolidation of nuclear materials and develops disposition pathways, thereby resolving cross-cutting nuclear materials management issues and supporting closure of EM sites. It also manages the interfaces with other DOE programs that have nuclear materials and spent nuclear fuel. Specific emphasis is placed on coordination of activities with the National Nuclear Security Administration, Office of Materials Disposition and the Office of Civilian Radioactive Waste Management. Coordination also involves the Defense Nuclear Facilities Safety Board, the Nuclear Regulatory Commission, and the International Atomic Energy Agency.

The purpose of the Office of Technical Program Integration is to provide technical and analytical guidance on waste management, deactivation and decommissioning activities, and environmental restoration programs. The office also manages the Department-wide Pollution Prevention program and provides expert technical support to site specific transition, deactivation, decommissioning, and surveillance and maintenance activities. Program goals for the Office of Technical Program Integration include resolving issues associated with implementation of complex-wide waste management configurations (e.g., establishing cost policy for disposal of low-level waste and mixed low-level waste at DOE disposal sites); providing guidance and overseeing implementation of DOE waste management and facility transfers, deactivation and decommissioning orders; establish DOE policy on recycle of scrap metals from radiologically controlled areas; promoting efficiencies through sharing of technical lessons learned and the use of more effective technologies; developing recommendations for cost savings particularly with respect to managing long-term groundwater remediation projects; interfacing with the Environmental Protection Agency regarding soil action cleanup levels; coordinating with other DOE program areas to collect Department-wide waste data to support International Treaty commitments, and representing the United States in the international community on waste management safety issues.

The goal of the National Pollution Prevention Program is to integrate waste minimization and pollution prevention into DOE's mission activities at all Department sites, and to reduce the life cycle cost of DOE's environmental operations through application of pollution prevention technologies and principles. The national program also measures DOE-wide compliance with existing regulatory, Executive Order, and DOE Directive requirements and reports on DOE's progress in meeting its statutory pollution prevention obligations. The program coordinates pollution prevention policy, plans, and activities across all Headquarters program offices. The program also provides technical assistance and funding to the DOE operations offices so that sites can identify and implement high payback projects to meet their regulatory compliance requirements as the Federal, state, and local level. These projects are coordinated with the Office of Science and Technology to ensure deployment of pollution prevention innovative technologies.

Funding for Multi-Site programs includes the National Facility Deactivation Initiative which provides technical expertise and proven field developed and tested tools and methodologies to sites facility deactivation planning. In addition, the Office of Integration and Disposition provides policy development and physical verification that all requirements have been met to transfer contaminated excess facilities from DOE program offices (Defense Programs, Nuclear Energy, and Science) to EM in a safe and efficient manner. Several hundred excess contaminated facilities are proposed to be transferred to the EM program over the next few years.

The purpose of the Office of Transportation is to develop and maintain baseline transportation resources, such as effective strategies, policy, and guidance for the safe and cost-effective transportation of DOE materials. Two principal initiatives are the National Transportation and Packaging Program and the Transportation Emergency Preparedness Program.

The goal of the National Transportation and Packaging Program is to provide the infrastructure for waste and materials to be transported for safe storage and/or disposal. Main functions are to develop and maintain DOE's baseline transportation services including route selection with the Department of Transportation, develop policy, ensure a fleet of transport containers maintained, and ensure training and protocols are provided for major shipping campaigns. Specific activities for the program include: completing system-wide assessment of DOE's transportation and packaging needs; provide a safe, environmentally compliant, and cost-effective transportation management system; provide a logistics center for transportation campaigns across the complex; focusing expertise from the Department's transportation and packaging technical base program to solve transportation and packaging requirements needs; and enhancing relationships and coordinating communication throughout the Department and with stakeholders.

The goal of the Transportation Emergency Preparedness Program is to assist in preparing DOE and other Federal, state, tribal, and local authorities to respond to any transportation incidents involving DOE shipments of radioactive material. The program provides the linkage between emergency preparedness and transportation activities.

The Office of Transportation is also responsible for managing the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program. The goal of the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program is to support the U.S. Government policy to reduce and eventually eliminate the use of weapons-usable enriched uranium in civil commerce, and to serve as technical experts in resolving issues associated with shipments under the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program.

Policy and Management activities focus on three major areas: tribal liaison efforts, intergovernmental and public accountability activities, regulatory compliance, and certain technical training. The primary goal of EM's Tribal program, within the Policy and Management Program, is to fully implement DOE's American Indian Policy. The EM program maintains cooperative agreements with ten Tribal Nations to enhance their direct involvement in cleanup decisions and activities. The cooperative agreements build core scientific and technical capacity at the Tribal level and allow for the establishment of Tribal environmental program offices. As a practical matter, the cooperative agreements enhance the government-to-government relationship between the Department and Tribal Nations, which is the cornerstone of the Department's American Indian Policy.

The main goal of EM's Office of Intergovernmental and Public Accountability, within the Policy and Management program, is to promote active public involvement in the EM planning and decision-making processes. Specifically, the mission of the office is to provide State, Tribal, and local governments and other interested stakeholders with opportunities for meaningful involvement in managing the cleanup and closure of the Nations' former nuclear weapons complex. The principal means by which this goal is accomplished is through the EM Site-Specific Advisory Board and through grants and cooperative agreements with the National Governors' Association, the National Association of Attorneys General, and the National Conference of State Legislatures. The Policy and Management program also includes the goal of implementing training and education programs to meet implementation plan commitments for Defense Nuclear Facilities Safety Board recommendations.

The goal of the Office of Site Closure is to promote and expedite required Environmental Management site closure activities and other DOE initiatives. Activities supported include performance measure tracking, cross complex support initiatives, closure specific requirements/issues, information/data management integration, project review/analysis and other cleanup related requirements.

The goal of the Office of Project Completion is to assure continuation of technical and managerial efforts associated with field support. This will include technical expertise and assistance to Federal staff responsible for overseeing and assessing site activities, such as successful site waste management and environmental restoration project completion activities, high-level waste storage tank safety issues, nuclear material and stabilization surveillance activities, site safety and health review and analysis, activities associated with Environmental Impact Statements and Records of Decisions.

The goal of the Environmental and Regulatory Analysis program is to resolve environmental, legal, and regulatory issues that cut across many sites. The program provides policy direction and guidance to operations and the EM program offices to successfully implement the negotiation and enhancement of environmental compliance and cleanup agreements and the requirements of the National Environmental Policy Act. The program also promotes conflict resolution and collaborative decision-making that will facilitate partnering programs between DOE, its regulators, and stakeholders. The Low-Level Radioactive Waste Forum to facilitate state and compact implementation of the Low-Level Radioactive Waste Policy Act, as amended, is supported.

The goal of the Analytical Services program is to ensure reliability, adequacy, and economy of environmental data by developing policy and guidance on planning, collection, interpretation, and use. Our goal includes integration of practices and programs among multiple sites and projects to improve confidence and avoid unnecessary costs of redundant actions.

The National Analytical Management program, an Analytical Services Program component, ensures laboratory analyses are of sufficient quality to: meet the needs and requirements of EM; be scientifically and legally defensible; provide the basis for returning DOE property to the public domain; and assists meeting EM's cleanup schedules.

Training initiatives funded under Multi-Site activities include training at DOE nuclear weapons facilities and related sites for hazardous waste operations. The goal of the Headquarters Program Integration program is to administer the DOE Hazardous Worker Training Grant program.

Program Objectives

The Multi-Site activities focus national attention on several areas that impact the Environmental Management goals and planned efforts which cut across the Department of Energy complex.

Significant Accomplishments and Program Shifts

Policy and Management

- Improve analytical capabilities for and conduct comparative life-cycle analyses for EM programs and projects (FY 2000/FY 2001/FY 2002).
- Provide general analytic and production support to national environmental policy development (FY 2000/FY 2001/FY 2002).
- Continue providing for EM-wide information management infrastructure activities and provide for hardware, software, maintenance, and upgrades to support management information systems (FY 2000/FY 2001/FY 2002).

Continue to maintain and develop EM's government-to-government relationship with ten tribes designed to foster cooperation on waste shipment and environmental restoration efforts (FY 2000/FY 2001/FY 2002).

Continue to implement training and education programs to resolve the Defense Nuclear Facilities Safety Board recommendations (FY 2000/FY 2001/FY 2002).

Conduct technical, regulatory, and policy analysis required for interactions with regulators (FY 2002).

Promote safety awareness throughout EM, gather, compile, interpret and report on safety information from the field (FY 2002).

Support to Project Completion

Issued the Waste Management Programmatic Environmental Impact Statement Records of Decision for high-level waste storage and low-level waste and mixed low-level waste treatment and disposal; continue to work with DOE sites and external stakeholders to resolve issues related to implementing the preferred configuration of the waste management system (FY 2000).

Refined disposition maps for DOE waste streams to show the planned pathways to move waste or materials from inventory or generation through required processing to treatment or stabilization and then to final disposition; conducted integrated planning to identify and evaluate significant opportunities to reduce risk and long-term mortgages associated with treatment and disposal of backlog waste (FY 2000).

Continued support to implement the new, comprehensive DOE Order 435.1, Radioactive Waste Management, along with the Order's Manual and Implementation Guide (FY 2000).

Provide peer review and conditional approval to Performance Assessments of DOE low-level waste disposal sites as required by the Defense Nuclear Facilities Safety Board Recommendation 94-2. Review and approve Composite Analyses for the Idaho National Engineering and Environmental Laboratory, and the Nevada Test Site Area 5 and issue Disposal Authorization Statements (FY 2000/FY 2001/FY 2002).

Interact with internal oversight organizations and external Federal and State regulators to ensure that waste management facilities and activities meet regulatory requirements that are both protective of human health and the environment, and cost-effective. Areas of particular focus include Resource Conservation and Recovery Act regulations, and Environment, Safety and Health oversight under DOE Policy 450.5, Line Environment, Safety and Health Oversight (FY 2000/FY 2001/FY 2002).

Reimbursed Environmental Protection Agency for Resource Conservation and Recovery Act inspections of DOE facilities as required by Section 104 of the Federal Facility Compliance Act of 1992 (FY 2000).

Oversee and assess site activities associated with high-level waste storage tank safety issues, nuclear materials and stabilization surveillance activities (FY 2001/FY 2002).

Support to Site Closure

Provide for technical support to the Office of Site Closure, including performance measure tracking and data analysis, and other data management integration efforts (FY 2000/FY 2001/FY2002).

- Provide support of interagency agreements with the Environmental Protection Agency, General Services Administration, and the VOLPE National Transportation Systems Center for activities dealing with project review/baselining efforts, strategic/management plans, cost/schedule improvement efforts, and business management practices related to final closure of sites (FY 2001/FY 2002).
- Provide support for crosscutting activities carried out by the various field offices in response to EM-wide integration, budget, and planning initiatives (FY 2001/FY 2002).
- Provide for the Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund as required by the Energy Policy Act of 1992 (FY 2000/FY 2001/FY 2002).

Support to Integration and Disposition

- Initiate and complete an Environmental Impact Statement addressing the policy impacts of recycling scrap metals from radiologically controlled areas (FY 2001/FY 2002).
- Provided technical support for interactions with the Office of Civilian Radioactive Waste Management on high-level waste issues, including implementation of activities necessary to implement the Environmental Management/Radioactive Waste Memorandum of Agreement, prepared responses to comments on high-level waste issues for the Yucca Mountain Environmental Impact Statement and assistance in preparation of the Site Recommendation Report for Yucca Mountain (FY 2000).
- Refine disposition maps for DOE waste streams to show the planned pathways to move waste of materials from inventory or generation through required processing to treatment or stabilization and then to final disposition; conducted integrated planning to identify and evaluate significant opportunities to reduce risk and long-term mortgages associated with treatment and disposal of backlog waste, as well as areas that need significant attention to support site closure (FY 2001/2002).
- Initiate Headquarters assessments of field element compliance with the DOE Order 435.1, Radioactive Waste Management (FY 2001/2002).
- Provide technical support for interactions with the Office of Civilian Radioactive Waste Management on high-level waste issues, including implementation of activities necessary to implement the Environmental Management/Radioactive Waste Memorandum of Agreement, prepare responses to comments on high-level waste issues for the Yucca Mountain Environmental Impact Statement and assistance in preparation of the Site Recommendation Report for Yucca Mountain (FY2001/FY2002).
- Initiate an Environmental Impact State identifying disposal option for “Greater than Class C Waste” (FY 2002).
- Provide support on Foreign Research Reactor Spent Nuclear Fuel Acceptance Program shipments, especially those from reactors with serious or sensitive nonproliferation and/or safety implications (FY2000/FY2001/FY2002).

- Continue to support the Department's commitments to the Environmental Security Interagency Agreement (with DOE and the Environmental Protection Agency supported by Department of State). This is principally through support of the Arctic Military Environmental Cooperation program and the International Institute for Applied Systems Analysis (FY 2000/FY2001/FY2002).

- Continue to support Headquarters directed National Facility Deactivation Initiative activities to achieve acceleration of deactivation and decommissioning and associated reduction in risk and mortgage. The continued development of deactivation methods, processes, and tools facilitates increased cost efficiencies and increased effectiveness in the completion of deactivation and decommissioning activities. Significant progress leading to risk/mortgage reduction was realized in FY 2000 at Richland, Brookhaven, and Rocky Flats (FY 2000/ FY2001/FY2002).

- Maintain and update the Manifest Information Management System commercial low-level waste data base at the Idaho National Engineering and Environmental Laboratory. This is the single compiled source of commercial data in the United States that is used by federal agencies and states and will be used to comply with requirements of the International Atomic Energy Agency Waste Management and Special Nuclear Fuel Convention (FY 2002).

- Develop comprehensive low-level waste and mixed low-level waste cost disposal strategy (FY2002).

- Continue to hold/implement the Technical Information Exchange Workshop to provide a forum for EM to share experience, expertise and lessons learned in environmental restoration, deactivation and decommissioning, and waste management among working level peers within the Department of Energy and with other Federal and state agencies, private sector industries, and other interested stakeholders. This is accomplished through multiple forums including workshops (held yearly), publications (Technical Information Exchange Quarterly), and electronic media (Technical Information Exchange Website) (FY2001/FY2002).

- Continue to provide support to Headquarters and the field through the EM Lessons Learned program by promoting the sharing of knowledge across the Department of Energy complex with specific emphasis on lessons learned relevant to environmental management business and functional areas. The goals of the EM Lessons Learned Program are to improve the efficiencies and effectiveness, reduce risk and waste, as well as accelerate remediation project closure through the generation and utilization of lessons learned and by providing a clearing house for EM lessons learned across the DOE complex (FY2001/FY2002).

- Provide support to integrate, optimize and manage DOE's long-term ground water remediation projects, including the identification and deployment of more efficient technologies (FY2001/FY2002).

Hazardous Waste Worker Training Program

- Support hazardous waste operations and emergency response training at the DOE weapons facilities and related sites (FY 2000/FY 2001/FY 2002).

Nuclear Criticality Safety Training

Continue to support and implement the Implementation Plan for the Defense Nuclear Facilities Safety Board Recommendation 97-2, Nuclear Criticality Safety Training (FY 2000/FY 2001/ FY 2002).

Environmental and Regulatory Analysis

Continue to support lifecycle estimates for the Environmental Management program (FY 2000).

Conduct pilot projects at the DOE sites to demonstrate and evaluate the viability of utilizing the LandTech technology as a community based collaborative decision-making tool to achieve tangible solutions for site cleanup, site closure, and land title transfer of Federal properties to public interests (FY 2000/FY 2001/FY 2002).

Continue to support life cycle estimates for the Environmental Management Program (FY 2001/FY 2002).

Transportation and Packaging Management

Continue to assure safe and regulatory compliant transportation system and operations (FY 2000/FY 2001/FY 2002).

Identify packaging needs and develop packaging alternatives to ensure that transportation requirements are met (FY 2000/FY 2001/FY 2002).

Continue to provide effective transportation and packaging systems engineering and analysis support to the DOE waste and material disposition programs to anticipate transportation issues and forecast future needs, such as the annual Transportation Baseline Report (FY 2000/FY 2001/FY 2002).

Continue to integrate institutional outreach and stakeholder involvement activities with other DOE program offices, field offices, and other EM program offices and continue ongoing outreach coordination efforts, such as the Transportation External Coordination Working Group (FY 2000/FY 2001/FY 2002).

Develop and implement a satellite tracking system (TRANSCOM2000) for DOE shipments (FY 2000/FY 2001/FY 2002).

Consult with potential grant recipients and develop process for a transportation grant program which would fund states to enhance their transportation planning, information systems, and emergency preparedness and training activities for DOE shipments (FY 2001/FY2002).

Continue implementation of transportation protocols developed in conjunction with States and Tribes through the Transportation External Coordination Working Group (FY2000/FY2001/FY2002).

Develop strategy to ship transuranic waste to the Waste Isolation Pilot Plant by rail (FY 2001/FY 2002).

Emergency Preparedness Program

Focus on Facility Emergency Preparedness review of site/facility emergency plans and procedures to assure that our personnel can safely and efficiently respond to emergency events (FY 2000/FY 2001/FY 2002).

Continue to exercise Headquarters EM Emergency Management Team to improve Headquarters field coordination during emergencies occurring at EM facilities (FY 2000/FY 2001/FY 2002).

Develop establish programmatic policy and direction for the EM Emergency Management program (FY 2000/FY 2001/FY 2002).

Develop an EM Headquarters emergency response plan that is consistent with the overall Departmental plan (FY 2000/FY 2001/FY 2002).

Continue to provide overall emergency program coordination with all elements of the Department through participation in the Emergency Management Coordinating Committee and other Departmental and Inter-Departmental groups (FY 2000/FY 2001/FY 2002).

Develop a training program for EM Headquarters personnel selected to participate on the Headquarters Emergency Management Team (FY 2000/FY 2001/FY 2002).

Continue to develop management solutions which address EM emergency management corrective and refine program metrics (FY 2000/FY 2001/FY 2002).

Transportation Emergency Preparedness Program

Complete revision of the Modular Emergency Response Radiological Transportation Training material to include the Waste Isolation Pilot Plant State and Tribal Education Program. Distribute revised material to the states and tribes (FY 2001/FY 2002).

Develop Regional Transportation Emergency Preparedness Program plans that outline preparedness activities aimed at the support of responding state, local, and tribal entities (FY 2001/FY 2002).

Continue to conduct train-the-trainer sessions to facilitate state/tribes conducting their own radiological training as part of their current hazardous materials curricula (FY 2000/FY 2001/FY 2002).

Through the Transportation Emergency Preparedness program coordinators in each region:

  < Establish a dialog to discuss emergency response roles, responsibilities, capabilities, notification procedures, and information needs with state and tribal governments along transportation corridors used for DOE unclassified radioactive material shipments (FY 2001/FY 2002);

  < Provide planning information and assistance to state and tribal contacts within their region (FY 2001/FY 2002);

  < Coordinate with site transportation programs to identify planned unclassified radioactive material shipments to assist state and tribal organizations in planning for the various shipments (FY 2001/FY 2002); and

  < Provide access to the Modular Emergency Response Radiological Transportation training to state and tribal training points of contact within their region (FY 2001/FY 2002).

Analytical Services Program

- Develop guidelines that will allow reference laboratories to establish a direct link to the national standard (National Institute of Science and Technology) in analytical measurement processes and the preparation of secondary standards. The guidelines delineate the process of establishing a reference or secondary laboratory according to requirements established by the American National Standards Institute (FY 2000/FY 2001/FY 2002).

- Implemented a consolidated analytical laboratory audit program with DOE-wide support and participation. Seventeen audits were completed by teams representing multiple sites. This program ensured the technical reliability of contract laboratory assessments reducing EM's program vulnerability and avoids EM-wide expenditures approaching $50,000 per shared audit (FY 2000).

- Develop funding partnerships with the Department of Defense and the Environmental Protection Agency to enhance Systematic Planning/Decision Uncertainty training and surpassed program goal for courses presented by less than 50 percent through leveraging external funding sources (FY 2000/FY 2001).

- Host meetings of analytical services providers and customers from multiple sites and programs to enhance communication and collectively assess program status, direction, and opportunities (FY 2000/FY 2001).

- Participate in Intergovernmental Programs to develop quality system and technical program guidance (radiochemistry laboratory protocols) (FY 2000/FY 2001/FY 2002).

Pollution Prevention

- Funded pollution prevention programs at twenty major sites to decrease generation of new waste, reduce cost of waste management, and meet federal, state, and local regulations, as well as Executive Order and DOE Order requirements related to waste minimization, recycling, affirmative procurement, and pollution prevention. The field pollution prevention program implemented 400 pollution prevention projects in FY 2000 that saved the Department over $80,000,000, and reduced/avoided 200,000 cubic meters of hazardous and radioactive wastes (Richland reduced 170,000 cubic meter; Savannah River reduced 11,000 cubic meters; Oak Ridge reduced 12,000 cubic meters, Chicago reduced 15,000 cubic meters; and Ohio reduced 4,000 cubic meters) (FY2000).

- Reduce the Department's generation of hazardous and radioactive wastes from routine operations to less than 40 percent of its 1993 level (FY2000/2001/2002).

- Identified over forty pollution prevention return-on-investment projects and secured funds for twenty of these projects. These twenty projects will save the Department $120,000,000 at a cost of $6,000,000 (FY2000).

- Prepare Resource Conservation and Recovery Act (Section 6002) Agency Summary Report to the Office of Management and Budget and Office of Federal Environmental Executive (FY 2000/2001/2002).

- Prepare the Department's Annual Waste Generation and Pollution Prevention Progress Report to meet the Programmatic Environmental Impact Statement lawsuit settlement and Executive Order 13148 (FY2000/2001/2002).

- Implement a Department-wide pollution prevention awards program. Over seventy excellent nominations were submitted by the DOE sites. This program is a great incentive for the field pollution prevention staff and is required by Executive Order 13148 (FY2000/2001/2002).
- Coordinate the Department's pollution prevention program and developed policy, guidance, and plans to facilitate pollution prevention, recycling, and affirmative procurement, in coordination with other Program Secretarial Offices (FY2000/2001/2002).

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
HQ-EM5-ASP / Analytical Services Program	2,794	2,685	1,350
HQ-EM74 / Hazardous Waste Worker Training Program (HAZWOPER)	8,500	8,481	1,000
HQ-EM75 / Environmental and Regulatory Analysis	862	798	798
HQ-PM-001 / Policy and Management	39,993	32,492	23,783
HQ-TMHQ1 / Transportation and Packaging Management	11,421	11,100	11,100
HQEM20 / Support to Integration and Disposition	3,489	7,942	7,942
HQEM24 / Transportation Emergency Preparedness	1,956	1,956	1,956
HQEM30 / Support to Site Closure	6,499	1,082	1,082
HQEM40 / Support to Project Completion	2,552	466	466
HQEM5 / Emergency Preparedness Program	833	838	838
HQNP-NCST / Nuclear Criticality Safety Training (DNFSB 97-2)	3,520	3,021	1,521
OPS/HQ-PP / Pollution Prevention	9,056	6,957	6,957
Subtotal	91,475	77,818	58,793
HQ-9999-01 / Contribution to Uranium Enrichment D&D Fund	420,000	419,076	420,000
Total, Multi-Site Activities	511,475	496,894	478,793

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
Multi-Site	511,475	496,894	478,793	-18,101	-3.6%
Total, Multi-Site	511,475	496,894	478,793	-18,101	-3.6%

Site Description

Multi-Site

The Multi-Site program consists of several subprograms, which provide for technical support for integration activities, education and training, environmental and regulatory analysis, hazardous waste operations and emergency response training, pollution prevention, and nuclear criticality safety training. The Multi-Site program covers activities that multiple sites benefit from and allows for cross complex solutions to be analyzed and discussed with stakeholders.

The role of the Multi-Site Federal effort is to provide leadership and support, establish and implement National and Departmental policy, conduct analyses and integrate activities across the various DOE sites. The Multi-Site program also supports education and training to improve the technical capability of the EM staff pursuant to Defense Nuclear Facilities Safety Board recommendations. This program also provides for technical assistance in assessing and establishing site baselines through data collection and analysis, all of which support the accelerated closure of EM sites. The Multi-Site program assesses the progress of the EM sites to track and report to Congress, interested stakeholders, and the public on the status of the program.

Detailed Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The scope planned for FY 2002 has been reviewed and is appropriate to meet the goals of the Multi-Site activities as outlined in the EM's sites baseline planning data. The funds requested for FY 2002 are appropriate to perform the activities based on a historical level of effort cost. No quantifiable corporate performance measures are associated with these projects.

HQ-EM5-ASP / Analytical Services Program 2,794 2,685 1,350

This program is responsible for supporting all EM programs to assure that credible, cost-effective sampling, and analytical needs are met, and the data vital for making decisions regarding waste management and environmental remediation meet the needs of EM, regulators, and the public.

- # Maintain oversight of EM's Consolidated Audit Program and ensure that a minimum of 25 audits of commercial analytical laboratories are completed.
- # Expand EM's Consolidated Audit Program audits to include DOE's onsite laboratories to demonstrate fair and equitable selection and treatment among laboratories selected for analytical service contracts.
- # Collaborate with the Environmental Protection Agency and the Department of Defense to complete and distribute Intergovernmental Federal Facility guidance establishing Quality Systems for environmental data collection, interpretation, and use for technologies.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Expand funding partnerships with the Department of Defense and the Environmental Protection Agency to enhance Systematic Planning/Decision Uncertainty training and meet program goal for courses presentations, to include at least one National meeting invitation.
- # Initiate a program to define requirements, coordinate activities, and integrate results for DOE participation in performance evaluation sample programs.

HQ-EM74 / Hazardous Waste Worker Training Program (HAZWOPER) 8,500 8,481 1,000

This activity provides worker training at DOE nuclear weapons facilities and related sites under the DOE Hazardous Worker Training Grant Program, which is administered by the National Institutes of Environmental Health Sciences.

- # Continue the training of workers at DOE nuclear weapons facilities in hazardous waste operations and emergency response.

HQ-EM75 / Environmental and Regulatory Analysis 862 798 798

These activities support a team to promote cost efficiencies within the EM program by establishing effective lines of communication with programs and sites to identify and assist in resolving multi-site environmental and regulatory issues across the DOE complex. The team acts as the National Environmental Policy Act Compliance Officer to promote cost-effective compliance across the EM program.

- # Participate in interagency work groups addressing Environmental Protection Agency administrative reforms.
- # Support sites and program offices in negotiating policy provisions of compliance and cleanup agreements.
- # Support program and field offices in renegotiating and approving Agreements-in-Principles as required.
- # Conduct environmental regulatory, legislative and policy reviews and analyses as required.
- # Continue to support the analysis of life cycle estimates for the EM Program.
- # Support the Low-Level Radioactive Waste Forum to facilitate state and compact implementation of the Low-Level Radioactive Waste Policy Act, as amended.

HQ-PM-001 / Policy and Management 39,993 32,492 23,783

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This activity provides the other contractual services funding required to plan, direct, and manage the EM program. Program activities encompass the Administrative Support area including support for the Assistant Secretary's staff; other contractual services necessary to accomplish program activities that include overall management; acquisition of education and training activities for the entire EM program; and environmental policy recommendations and planning activities.

- # Provide EM and others with the technologies needed to support the EM programs.
- # Enhance Tribal, state, and local government participation in the EM program through the continuation of State and Tribal Governments Working Group, local officials exchange seminars, government-to-government relationships with the native American Tribes and grants of cooperative agreements with the National Governors Association, and the National Association of Attorneys General, and the National Conference of State Legislatives. Continue management and evaluation of the EM Site-Specific Advisory Board and support the National Environmental Training Office's complex-wide effort.
- # Establish recruitment, retention and training programs to respond to Congressional/General Accounting Office/Inspector General/Defense Nuclear Facilities Safety Board recommendations.
- # Provide analytical support for analysis of DOE/EM budget issues.
- # Conduct technical, regulatory and policy analyses required for interactions with the regulators.
- # Conduct technical, regulatory, and policy analyses required for interactions with the Nuclear Regulatory Commission, the Environmental Protection Agency, other Federal agencies and state regulators.
- # Provide resources, expertise, and experience in the areas of safety, health, and security; as well as in emergency management, package certification, quality assurance, analytical services, and risk management. Provide corporate safety conscience by providing technical assistance to the site teams and ensure constant vigilance throughout the system. Promote safety awareness; gather, compile, interpret, and report on safety information from the field; apply multi-disciplinary technical expertise where needed; and assist site teams and the field in fulfilling their safety responsibilities.
- # Instill safety awareness by utilizing the National Safety Council to conduct surveys, which will indicate whether and how EM's commitment to safety is working, assess top and middle management's perception of how safety functions within each organization, bring forward problems and matters of concern to gauge the effectiveness of Integrated Safety Management in EM.
- # Support Independent Project Reviews and project management development and oversight in accordance with DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

HQ-TMHQ1 / Transportation and Packaging Management .	**11,421**	**11,100**	**11,100**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The National Transportation Program develops and maintains the DOE baseline transportation resources, including the coordination and development of DOE-wide transportation policy to assure the availability of safe, regulatory compliant, economical, efficient transportation for DOE materials through: 1) the identification of transport needs of all the DOE programs, particularly in supporting EM focus on project acceleration and site closure; 2) resolution of transport issues at the program level; 3) maintenance of a corporate institutional program to interact with national and regional stakeholders; 4) vigorous examination of all projected DOE material flows; 5) conducting a forward-looking, aggressive transportation technology program to resolve complex transportation and packaging problems and address regulatory issues; and 6) operational support of packaging and shipping activities both on- and off-site (excluding weapons and weapon components, Naval Reactors shipments and commercial spent nuclear fuel).

- # Maintain a reliable and state-of-the-art Internet based satellite shipment tracking service for DOE, State, and Tribal users.
- # Provide Systems Engineering/Integration and Planning services for transportation activities across all DOE programs, and continue focus on radioactive waste and materials transportation in support of the DOE Waste and Materials disposition program.
- # Negotiate discounted pricing agreements with carriers in all aspects of DOE transportation operations.
- # Develop and maintain automated systems to support the DOE field offices and contractor organizations. (Automated Transportation Management System, Packaging Management Tracking System, TRANSNET, Prospective Shipment Module).
- # Develop strategy for shipping transuranic waste to the Waste Isolation Pilot Plant by rail.

HQEM20 / Support to Integration and Disposition 3,489 7,942 7,942

The purpose of this project is to support the Office of Integration and Disposition mission to expedite site closure and project completion by providing Multi-Site services that ensure the timely, coordinated and cost-effective completion of the EM mission. Integration activities, crosscutting DOE/EM include spent nuclear fuel, nuclear materials stewardship, non-proliferation, legacy and remediation waste, deactivation, decommissioning and remediation, radioactive waste management, contaminated excess facility transfers, waste prevention, technology transfer and lessons learned.

- # Complete Environmental Impact Statement on policy of recycling scrap metal from radiologically controlled areas.
- # Identify and implement complex-wide integration projects.
- # Assess and audit field compliance with DOE Order 435.1, Radioactive Waste Management.
- # Prepare complex-wide planning documents such as the low-level waste disposal capability report, waste management plans, and alternative analysis.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Analyze and exchange information with the international community on safety of waste management.
- # Maintain and update the Manifest Information Management System's Commercial low-level waste data base at the Idaho National Engineering and Environmental Laboratory.
- # Initiate an Environmental Impact State identifying disposal options for "Greater Than Class-C Waste".
- # Implement Headquarters responsibilities under DOE Policy 450.5, including assessments and analyses and interactions with the Environmental Protection Agency and the Nuclear Regulatory Commission.
- # Continue to support interfaces on high-level waste with the geologic repository program (DOE-Office of Civilian Radioactive Waste).
- # Support planning and implementation with the National Nuclear Security Administration on immobilized plutonium waste forms.
- # Support the Foreign Research Reactor Spent Nuclear Fuel Acceptance program by performing technical analysis to prepare for shipments from sensitive countries, by performing expected review of cask certification requests and by providing risk analysis, as necessary.
- # Support National Spent Nuclear Fuel Program to prepare DOE-owned spent nuclear fuel for geologic repository.
- # Develop and perform historical environmental release assessments of Russian weapons plants and military facilities.
- # Support environmental security efforts to improve Russian waste management capabilities and promote self reliance through international environmental cooperation activities. Also provide support to the International Radioecology Laboratory.
- # Provide the Nuclear Regulatory Commission support of foreign fuel shipments through reviews of five transport casks and two shipping routes.
- # Perform Programmatic Environmental Assessment on Uranium Materials Management.
- # Develop management plans for excess nuclear materials.
- # Maintain nuclear materials database at the Savannah River Site.
- # Support National Facility Deactivation Initiative and National Decommissioning Program to ensure more efficient deactivation and decommissioning.
- # Provide for further improvements to the methods, processes, tools and technologies used to implement deactivation and decommissioning projects.
- # Maintain EM-wide lessons learned program by collecting, analyzing, archiving, and distributing lessons learned.

HQEM24 / Transportation Emergency Preparedness	**1,956**	**1,956**	**1,956**

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The Department of Energy and its transportation activities have come under intense scrutiny from Congress, states, tribes, local governments and the public. Increased shipping activities will heighten issues related to transporting hazardous material, especially radioactive materials, and underline the need for verifiable and adequate emergency preparedness nationwide. A key issue in all transportation activities is responder readiness. The Transportation Emergency Preparedness Program addresses nationwide preparedness needs, and assists DOE, other Federal, state, tribal, and local authorities to prepare for response to a transportation incident involving DOE radioactive material shipments.

- # The primary goal is to establish a functioning, integrated program to achieve mission success with the increased need for emergency preparedness activities for responders along transportation corridors resulting from a projected increase in the number of shipments of radioactive materials. Program development and implementation will be completed by the end of FY 2004 or through activities in earlier accelerated shipping campaigns. The need for unique "Shipment Specific" planning and training will be significantly reduced. Beyond 2004 there will be a continuing need for program maintenance in support of increased shipping activities.
- # Identify types of shipments to be transported through regions.
- # Assist lead State agencies in conducting needs assessments in two regions.
- # Conduct needs assessments in two additional regions.
- # Analyze preparedness status findings provided by lead agencies.
- # Modify plan for program implementation of the Transportation Emergency Preparedness Program within the regions.
- # Continue to address training requirements for States and Tribes along DOE transportation corridors.

HQEM30 / Support to Site Closure 6,499 1,082 1,082

The activities funded by this project include a variety of crosscutting efforts that support required Environmental Management Site Closure activities and other DOE initiatives. Technical support is provided in the areas of performance measure tracking; information/data management integration; project review/analysis; and other cleanup related requirements.

- # Provide for limited technical support to the Site Closure program, including tracking of performance measure information and other data management integration efforts.
- # Provide for support of interagency agreements with the Environmental Protection Agency, General Services Administration, and the Volpe National Transportation Systems Center for activities dealing with site-closure requirements, project review efforts, strategic/management plans, cost/schedule improvement efforts, and other closure related initiatives.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

HQEM40 / Support to Project Completion 2,552 466 466

Funding for these activities will assure that technical and managerial efforts associated with field support for Office of Project Completion sites will continue. This will include technical expertise and assistance to Federal staff responsible for overseeing and assessing site activities. These activities will include: successful site waste management and environmental restoration project completion activities, high-level waste storage tank safety issues, nuclear material and stabilization surveillance activities, site safety and health reviews and analysis, activities associate with Environmental Impact Statements and Records of Decision. This support will help Federal staff meet its objectives of having technical expertise needed to manage programmatic goals, while stressing the continued need to reduce unnecessary costs as work progresses.

- # Conduct analyses and reviews in response to the Defense Nuclear Facilities Safety Board recommendations.
- # Implement Headquarters responsibilities under DOE Order 435.1, Radioactive Waste Management; and DOE Policy 450.5, Line Environment, Safety and Health Oversight.
- # Exchange and analyze information with foreign national programs on innovative waste management technologies and operational experience.

HQEM5 / Emergency Preparedness Program 833 838 838

The Emergency Management Program encompasses all emergency management activities under the purview of the Office of Environmental Management. These responsibilities include overall emergency management policy development and oversight for EM sites and facilities, planning, training and exercising for EM's Emergency Management Team representatives, providing for emergency notification for EM management personnel, and oversight of the DOE wide transportation related emergency activities. The focus of emergency management program policy development activities is intended to ensure that EM sites, facilities and Headquarters are ready to respond to emergencies in coordinated fashion.

- # Complete development of the EM Emergency Response Plan and accompanying procedures.
- # Complete four onsite emergency management oversight reviews in coordination with the Office of Emergency Management.
- # Provide for Headquarters participation in and oversight of three field emergency response exercises.
- # Operate and maintain the Headquarters EM emergency notification capability.
- # Develop EM emergency management policy, programmatic guidance.
- # Review Emergency Readiness Assurance Plans from all EM sites and facilities.
- # Develop corrective actions consistent with the DOE emergency management corrective action plan.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

HQNP-NCST / Nuclear Criticality Safety Training (DNFSB 97-2) 3,520 3,021 1,521

This activity provides support to the Nuclear Criticality Safety Training program. The Implementation Plan for Recommendation 93-2, "The Need for Critical Experiment Capability," established a program to maintain the viability of the Department's critical experiments program and improve the knowledge base underlying prediction of criticality. Ongoing activities have been included under the program established for the Defense Nuclear Facilities Safety Board Recommendation 97-2, Nuclear Criticality Safety Training, which supports the efficient integration and functioning of criticality safety programs across all DOE operations involving fissile materials.

The Environmental Management-funded segments of the Defense Nuclear Facilities Safety Board Recommendation 97-2, consist of three elements:

< nuclear data;

< calculational methods; and

< guidance on applicability of bounding curves/data.

OPS/HQ-PP / Pollution Prevention 9,056 6,957 6,957

The Department's pollution prevention mission is to reduce or eliminate all wastes and pollutants in order to minimize the impact of the Department's operations on the environment, to reduce operational cost, and improve the safety and health of its operations. Pollution prevention is the Department's preferred approach to reducing waste, mitigating health risks, and protecting the environment, in accordance with the Pollution Prevention Act of 1990. This was evidenced by the Secretary's November 1999 establishment of aggressive source reduction, recycling, and affirmative procurement goals, to be achieved by 2005. Pollution prevention applied within EM can significantly reduce wastes, allowing the cost savings to be used to accelerate the cleanup effort.

Implement pollution prevention programs at twenty DOE sites to decrease generation of new wastes, reduce cost of waste management, and meet federal, state, and local regulations as well as Executive Order and DOE order requirements related to waste minimization, recycling, affirmative procurement, and pollution prevention. Each site develops waste minimization/ pollution prevention plans, identified pollution prevention opportunities, works with site managers to implement cost effective pollution prevention projects, tracks site waste generation, and report results to Headquarters. The sites will implement at least 50 pollution prevention projects.

Prepare the Annual Waste Generation and Pollution Prevention Progress Report to meet the Programmatic Environmental Impact Statement lawsuit settlement and recent Executive Orders.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Prepare annual Resource Conservation and Recovery Act (Section 6002) Agency Summary Report to the Office of Federal Environmental Executive.
- # Prepare report to the Secretary on progress in meeting his pollution prevention goals.

Subtotal, Multi-Site	91,475	77,818	58,793

HQ-9999-01 / Contribution to the Uranium Enrichment D&D Fund

The Energy Policy Act of 1992 created the Uranium Enrichment Decontamination and Decommissioning Fund to pay for the cost of cleanup of the gaseous diffusion facilities located in Oak Ridge, Tennessee; Paducah, Kentucky; and Portsmouth, Ohio. The fund also covers the Federal cost to reimburse operating uranium or thorium processing site licensees for the costs of their environmental cleanup at designated sites, subject to a specific reimbursement limit. The Department compensates site owners on a per-ton basis for the restoration costs for those tailings attributable to the Federal government.

- # The Act authorizes annual fund contributions of $480,000,000, adjusted for inflation, from two sources: up to $150,000,000 from a special assessment on domestic utilities based on the ratio of their separative work unit purchases from the Department to total purchases from the Department including those produced for defense purposes, with the remainder of required funding to come from annual Congressional appropriations. The purpose of this activity is to provide the annual Government contribution.
- # Provide the FY 2002 Federal Government contribution to the Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992.

HQ-9999-01	420,000	419,076	420,000
Total, Multi-Site	**511,475**	**496,894**	**478,793**

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2001 vs. FY 2002 ($000)
HQ-EM5-ASP / Analytical Services Program	
# Decrease in funding reflects reduction in the level-of-effort associated with meeting analytical, waste management and remediation needs of the regulators and the public.	-1,335

	FY 2001 vs. FY 2002 ($000)
HQ-EM74 / Hazardous Waste Worker Training Program (HAZWOPER)	
# Decrease in funding reflects reduction in training under the DOE Hazardous Worker Training Grant program.	-7,481
HQPM-001 / Policy and Management	
# Decrease in funding reflects the need to support congressional and Departmental initiatives, and higher priority program activities.	-8,709
HQNP-NCST / Nuclear Criticality Safety Training (DNFSB 97-2)	
# Decrease in funding reflects progress made to close out and meet requirements of the Defense Nuclear Facilities Safety Board Recommendation 97-1.	-1,500
HQ-9999-01 / Contribution to the Uranium Enrichment D&D Fund	
# No significant change (0.2 percent).	924
Total Funding Change, Multi-Site	-18,101

Hanford Site - Office of River Protection

Mission Supporting Goals and Objectives

Program Mission

The mission of the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, carried out by the Office of River Protection is to safely operate the underground high-level waste storage tanks and to build and operate the tank waste treatment complex to complete the cleanup of Hanford's highly radioactive tank waste. The Office of River Protection is located at the Hanford Reservation in Richland, Washington. The critical mission is to immobilize the waste contained in Hanford's 177 high-level waste tanks and to protect the Columbia River. The Hanford Site is scheduled for completion in FY 2046, with the estimate life-cycle cost for the Office of River Protection of $49,700,000,000.

The Office of River Protection works with the Richland Operations Office to protect the health and safety of the public, workers, and the environment, and to control hazardous materials from reaching the Columbia River, a national treasure. Under the Defense Environmental Restoration and Waste Management, Post 2006 Completion account, the Office of River Protection manages the River Protection Project in the central plateau (200 Area) of the Hanford Site. The Hanford site is the nation's largest former nuclear weapons production site, and the cleanup of the site is the largest, most technically complex, environmental cleanup project yet undertaken.

The Hanford Federal Facility Agreement and Consent Order, commonly referred to as the Tri-Party Agreement, negotiated by the Department of Energy, the State of Washington, and the Environmental Protection Agency, is a major regulatory driver for the project. In addition, interim tank stabilization activities necessary to remove pumpable liquids from single-shell tanks are subject to a Consent Decree administered by a Federal District Court in the State of Washington. The Consent Decree was negotiated as a result of a threatened lawsuit by the State of Washington against DOE for not meeting the Tri-Party Agreement milestones. This Consent Decree was later amended to include a requirement that DOE award a new contract for design, construction, and commissioning of the Waste Treatment and Immobilization Plant by January 2001. The new contract was awarded on December 11, 2000.

Program Goal

The ultimate program goal for the Hanford Site is to protect the Columbia River. The Office of River Protection is responsible for safe storage, retrieval, treatment and disposal of 53 million gallons of highly toxic, high-level radioactive waste stored in 177 underground storage tanks located within 7 miles of the Columbia River. The waste will be retrieved from the storage tanks, separated into low-activity and high-activity fractions, and then vitrified. Low activity waste will be disposed in the Hanford central plateau, and immobilized high-level waste will be stored at Hanford pending ultimate disposal in the nation's geologic repository.

The Department has initiated design of the Waste Treatment and Immobilization Plant to immobilize the tank waste. Construction is scheduled to begin in CY 2002 and the start of plant operations to commence in CY 2007. By that time, all essential site infrastructure construction will be completed to support the operation of the Waste Treatment and Immobilization Plant. By FY 2018, approximately 10 percent of the wastes by mass and 25 percent by radioactivity will be safely immobilized and stored.

Several interim activities are being conducted by the Office of River Protection to resolve the most urgent risks at the Hanford Site. The interim stabilization program is removing pumpable liquids from the old, single-shell tanks, some of which have leaked, to prevent further subsurface contamination. The tank farm systems and components are being upgraded to provide an adequate margin of safety and to provide the retrieval and transfer systems needed to provide feed to the Waste Treatment and Immobilization Plant. These important actions to address urgent risks also will enable remaining safety issues to be resolved. For example, as a result of upgrading the tanks, the Office of River Protection is gaining valuable flammable gas release data, which will help to resolve the final Priority 1 safety issue–Flammable Gas.

The pathway for cleanup of the Hanford tanks is formally documented in the Tri-Party Agreement, under which DOE, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency have agreed to a 30-year cleanup timetable. Key dates related to this project (specifically the M-62-00 milestone series) are found in the Ecology Director's Final Determination pursuant to the Tri-Party Agreement dated March 29, 2000. Milestone M-62-06, Start of Construction-Phase I Treatment Complex, is scheduled for July 31, 2001, with a condition to reassess the start date after award of the Waste Treatment and Immobilization Plant contract. Milestone M-62-9, Start of Hot Commissioning, is scheduled for December 31, 2007, and the entire Phase I scope of work is scheduled for completion by February 28, 2018 (M-62-00A).

Program Objectives

The most important near-term objective is to complete design and initiate construction of the Waste Treatment and Immobilization Plant. Another near-term program objective for the Office of River Protection is to complete interim stabilization of the remaining 22 single-shell tanks by pumping their contents to safer, newer double-shell tanks by FY 2004. Actions to be completed in FY 2001 will successfully close the flammable gas safety issue, the last of the Priority 1 safety issues identified as of September 30, 1993, and remove all remaining tanks from the Watch List.

In achieving our highest priority goals, the Office of River Protection will seek to apply innovative science and technology solutions that facilitate cleanup goals safer, faster, and will less cost. For example, we are pursuing innovative methods to evaluate double-shell tanks (Ultrasonic Tank Integrity Testing System) with the goal of preventing further leakage from the Hanford tanks.

Significant Accomplishments and Program Shifts

- On May 8, 2000, the Secretary announced that the privatization contract would be terminated. The Department had determined that the privatization proposal submitted April 24, 2000, was unacceptable in many areas, including cost, schedule, management, and business approach. Although the privatization contract was terminated, significant progress was made under that contract in acquiring waste treatment capability. The privatization contractor delivered a robust technical design for the Waste Treatment and Immobilization Plant that meets or exceeds technical requirements. The Department plans to fully utilize and build upon this design. A new cost plus incentive fee contract was awarded on December 11, 2000, to Bechtel Washington to design, build and commission the Waste Treatment and Immobilization Plant. (Program Shift)

- Due to the termination of the privatization contract and the pursuit of more traditional contractual means to acquire the Waste Treatment and Immobilization Plant, the management of the Office of Safety Regulation (the Regulatory Unit) was transferred from the Richland Operations Office to the Office of River Protection. This transfer places full safety authority within the Office of River Protection, which is more in line with traditional DOE practice. (Program Shift)

- The Office of River Protection approved an Accounting Practice Change for the direct funding of indirect expenses resulting in a streamlining of the rate structure. This change will simplify estimating and planning eventually producing cost reductions and efficiencies for these processes. These new direct expenses will be funded under PBS TW10, RPP Management Support. The increase reflected in PBS TW10 will be offset by reductions in all other PBS. (Program Shift)

- Completed characterization of four tanks, providing detailed characterization data for a total of 136 out of 177 tanks (78 percent) (FY 2000/TW01).

- Completed the annual delivery of Tri-Party Agreement M-44-00A required Waste Information Requirements to the State of Washington which identifies the characterization commitments for the coming year (FY 2000/TW01).

- Implemented the Final Safety Analysis Report, which significantly improved the nuclear safety management process for the River Protection Project (FY 2000/TW02).

- Resolved organic solvent, and high-heat safety issues; removed two organic solvent tanks from the Wyden Amendment Watch List (FY 2000/TW02).

- Completed transfer of waste from Tank SY-101, remediating the surface level rise. Removed Tank SY-101 from the Flammable Gas Watch List; closed the Flammable Gas Safety Issue and resolved the associated unreviewed safety question (FY 2000/FY 2001/TW02).

- Removed remaining 24 tanks from the Wyden Amendment Watch List (46 of 70 tanks have been removed through January 2001); this will document closure of the unreviewed safety questions and complete the Tri-Party Agreement Milestone M-40-00 (FY 2001/TW02).

- Operated the tank farm complex in a safe and efficient manner consistent with the Authorization Basis, and continued to perform corrective and preventative maintenance at a level sufficient to reduce occurrences outside the Authorization Basis (FY 2000/FY 2001/FY 2002/TW03).
- Implemented the Integrated Safety Management System for the River Protection Project in accordance with the Integrated Safety Management Criteria issued October 25, 1999, by the Deputy Secretary of Energy (FY 2000/TW03).
- Achieved 1,000,000 work hours without a restricted workday or a lost time injury (FY 2000/TW03).
- Completed saltwell pumping of six single-shell tanks in FY 2000 for a total of 130 of 149 single-shell tanks pumped or 977,000 gallons of waste (18 tanks remain to be pumped per the Consent Decree). Completed interim stabilization of T Farm (FY 2000/FY 2001/TW03).
- Started saltwell pumping of four single-shell tanks in FY2000. Initiated pumping eight single-shell tanks required by the Consent Decree (FY 2001/TW03).
- Continued double-shell tank integrity assessments consistent with Washington State Administrative Order 00-NWPKW-1250. The testing performed will provide information enabling projections of tank service life and decisions whether new tanks will be required before completion of the River Protection Project mission. Two additional tanks completed partial ultrasonic testing in FY 2000 (FY 2000/FY 2001/TW03).
- Removed over 95 percent of the sludge waste from high-heat Tank C-106, which resolved the High Heat Safety Issue (FY 2000/TW04).
- Completed testing of two full-scale working mixer pump prototypes in Tank AZ-101 under a waste retrieval technology demonstration (FY 2000/TW04).
- Complete the initial characterization of the Vadose Zone in Waste Management Areas B/BX/BY. Issue to the State regulator the Field Investigation Report for the Vadose Zone in Waste Management Areas S/SX (FY 2001/TW04).
- Issue the final report on baseline spectral gamma logging of the soil around the single-shell tank farms. This report provides data on existing contamination around the farms and will serve as the baseline to track whether there is any increase or movement of contamination during future operations and waste retrieval (FY 2001/TW04).
- Initiate the planning and design activities for conducting near-term, i.e., prior to September 30, 2006, retrieval demonstrations in single-shell tanks in compliance with Tri-Party Agreement Milestone M-45-00A (FY 2001/TW04).
- Supported issuing the Request for Proposal and evaluation of the bids for the waste treatment plant contractor (FY2000/TW05).
- Support evaluation of contractor deliverables and strategic planning (FY2001/TW05).
- Issued a Request for Proposal on August 31, 2000, to design, construct, and commission the Waste Treatment and Immobilization Plant (FY 2000/TW06LT).

- # Awarded the Waste Treatment and Immobilization Plant contract on December 11, 2000 (FY 2001/TW06LT).
- # Perform due diligence review of the cost, schedule and technical requirements of the Waste Treatment and Immobilization Plant, and continue advanced design of all structural, mechanical, electrical and process drawings to support initiation of construction (FY 2001/TW06LT).
- # Completed the construction of the liquid effluent lines, completed construction/startup of site development, roads, and electrical systems providing infrastructure support to the Waste Treatment and Immobilization Plant. Complete all remaining infrastructure construction activities and closeout Line Item Project 99-D-403 Phase I Infrastructure Support (FY 2001/FY 2002/TW08).
- # Established a Project Integration Office to consolidate the baseline, requirements and priorities across the River Protection Project (FY 2000/FY 2001/TW10).
- # Completed a Voluntary Protection Program Self Assessment (FY 2000/FY 2001/TW10).
- # Signed a contract modification for a five-year extension of the CH2M Hill Hanford Group, Inc. contract on January 17, 2001 (FY 2001/TW10)
- # Continue design and construction of tank farm upgrades and waste retrieval systems to allow delivery of waste feed to the Waste Treatment and Immobilization Plant (FY 2000/FY 2001/FY 2002/TW12).
- # Initiate design of Immobilized High-Level Waste Interim Storage Facility for the facility modifications to allow interim storage of the high-level waste canisters produced by the Waste Treatment and Immobilization Facility. This project is funded as a subproject within the Project Engineering and Design Line Item 01-D-414, through FY 2004 (FY 2001/TW12).
- # Initiate double-shell tank waste pH adjustments to meet operational specifications.

Funding Schedule

(dollars in thousands)

	FY 2000	FY 2001	FY 2002
ORP-RG01 / Office of Safety Regulation	5,663	6,502	4,001
ORP-TW01 / Tank Waste Characterization	29,964	24,226	24,000
ORP-TW02 / Tank Safety Issue Resolution Project	21,067	18,069	0
ORP-TW03 / Tank Farms Operations	118,275	129,852	118,079
ORP-TW04 / Waste Retrieval, Storage, and Disposal Operations	49,192	44,485	43,500
ORP-TW05 / Process Waste Support	10,980	950	0
ORP-TW06LT / Waste Treatment and Immobilization Plant Construction	105,673	376,171	500,000
ORP-TW08 / Process Waste Privatization Infrastructure	15,345	10,476	402
ORP-TW09 / Immobilized Tank Waste Storage and Disposal Project	8,016	6,741	0
ORP-TW10 / RPP Management Support	51,661	74,986	68,486

ORP-TW11 / Waste Treatment and Immobilization Plant Operations . . .	0	0	4,000
ORP-TW12 / Waste Retrieval, Storage, and Disposal Construction	24,576	63,270	50,000
Total, Office of River Protection	440,412	755,728	812,468

Funding by Site

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
CH2M Hill	334,739	379,557	312,468	-67,089	-17.7%
Bechtel Washington	105,673	376,171	500,000	123,829	32.9%
Total, Office of River Protection	440,412	755,728	812,468	56,740	7.5%

Metrics Summary

	FY 2000	FY 2001	FY 2002
Project specific metrics and key milestones are included in the Detailed Program Justification as applicable.			

Site Description

Office of River Protection

In order to more effectively manage the River Protection Project and in response to Section 3139 of the *Strom Thurmond National Defense Authorization Act for Fiscal Year 1999*, the Secretary of Energy established the Office of River Protection at the Hanford Site in the State of Washington. The Office of River Protection is responsible for the storage, treatment and immobilization of tank waste and the operation, maintenance, engineering, and construction activities in the 200 Area tank farms. The 200 Area tank farms are located in the central plateau of the Hanford Site and are 7 miles south and 10 miles west of the Columbia River, the largest river in the Pacific Northwest. The Hanford Site is mostly flat and semi-arid with a relatively mild climate. The 200 Area had been the site of major nuclear chemical processing plants, which were shut down by the early 1990's. The 200 Area is now the focus of the Office of River Protection and includes 177 underground storage tanks (149 single-shell and 28 double-shell) containing approximately 190 million curies in more than 53 million gallons of radioactive waste from past processing operations. The Office of River Protection will manage the complex River Protection Project activities to ensure successful immobilization and disposal of high-level wastes and the ultimate protection of the Columbia River resources.

Detail Program Justification

(dollars in thousands)

FY 2000	FY 2001	FY 2002

The site is managed through an incentivized management and operations contractor, with fixed-price subcontracts, to assure the most cost-effective services to the Government. The scope planned for FY 2002 has been reviewed and is appropriate to meet the critical goals of the program. The integrated baseline and supporting documentation have had an independent review of the scope by an internal Hanford and Headquarters team. The funds requested for FY 2002 are appropriate to perform the critical activities based on estimated project progress and accumulated cost management success.

ORP-RG01 / Office of Safety Regulation 5,663 6,502 4,001

This project funds the Office of Safety Regulation within the River Protection Project. The Office of Safety Regulation ensures adequate safety through development of guidance, review and approval of the River Protection Project Waste Treatment Contractor's regulatory submittals, and execution of a comprehensive inspection program. The Office of Safety Regulation will continue through design, construction, operation, and deactivation of the Waste Treatment and Immobilization Plant. In FY 2002, these activities transfer from the Richland Operations Office to the Office of River Protection.

- # Ensure adequate safety of the River Protection Project Waste Treatment and Immobilization contractor.
- # Execute a comprehensive inspection program.
- # Complete review of the Waste Treatment Contractor's Construction Authorization Request and Standards Approval Package.
- # Prepare and issue the Preliminary Safety Evaluation Report, Construction Authorization Agreement, Standards Approval Package.
- # Review revisions to the contractor's Quality Assurance Plan and Radiation Protection Plan.

Key Milestones

- # Limited Construction Authorization Request Agreement and environmental report issued (September 2001).
- # Preliminary Safety Analysis Report evaluation report issued (June 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

ORP-TW01 / Tank Waste Characterization 29,964 24,226 24,000

This project's mission is to provide characterization for tank waste safe storage, operations, and retrieval/disposal. Characterization of tank waste contents is performed to: verify tank waste composition to ensure no problems are occurring during storage; assess waste compatibility to ensure that no problems are created while the wastes are being retrieved and transferred; and provide input to the design of the feed delivery systems and Waste Treatment and Immobilization Plant to ensure they can be operated to properly retrieve and treat the waste.

- # Maintain the Tank Waste Characterization program capability and capacity for Core, Grab, and Vapor sampling events to support minimum safe operations, the Interim Stabilization Program for Consent Decree-ordered pumping of single-shell tanks, and the Evaporator operations supporting waste volume reductions.
- # Issue required Laboratory Analysis Reports to support analysis of the tank wastes.
- # Complete Tri-Party Agreement Milestone M-44-00A for the delivery of annual Waste Information Requirements Documents to the State of Washington.

Key Milestones

- # Submit the final Waste Information Requirements Document for FY 2002 to Ecology (August 2001).
- # Issue characterization deliverables consistent with the Waste Information Requirements Document developed for FY 2001 (September 2001).
- # Issue characterization deliverables consistent with the Waste Information Requirements Document developed for FY 2002 (September 2002).

ORP-TW02 / Tank Safety Issue Resolution Project 21,067 18,069 0

This project's mission is to provide an adequate, comprehensive, and reliable Authorization Basis for the management and storage of tank waste. This will be accomplished by developing and maintaining an integrated Authorization Basis and by resolving outstanding safety issues to ensure safe storage and retrieval of waste. In September 2001 the tank safety issues for all high priority Watch List Tanks, established by the Wyden Amendment, will be resolved/mitigated. This PBS will be closed in FY 2002 and all Authorization Basis activities will be transferred to PBS ORP-TW03, Tank Farm Operations.

- # No activity in FY2002. Activity transferred to PBS ORP-TW03, Tank Farm Operations.

Key Milestones

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Mitigate/resolve tank safety issues for high priority watch list tanks (September 2001).

ORP-TW03 / Tank Farm Operations 118,275 129,852 118,079

This project's mission is to operate and maintain tank farm facilities to safely store waste until it is retrieved and to perform the single-shell tank interim stabilization program to pump remaining liquids from the single-shell tanks. The interim stabilization program will be completed in FY 2004 in accordance with the Consent Decree administered by a Federal District Court in the State of Washington.

Beginning in FY 2002, this project will also be responsible for maintaining an adequate, comprehensive, and reliable Authorization Basis for management and storage of tank waste.

- # Conduct cross-site transfers in support of Interim Stabilization and Evaporator Campaigns.
- # Operate the tank farm complex in a safe and efficient manner consistent with the Authorization Basis.
- # Continue to perform corrective and preventative maintenance to maintain equipment operations within the Authorization Basis.
- # Maintain upgrade of plant drawings through the Configuration Management Project.
- # Continue Interim Stabilization activities consistent with Consent Decree requirements.
- # Continue update of the Master Equipment List.
- # Work to resolve the double-shell tank corrosion control and life extension issues.
- # Continue the double-shell tank integrity assessments to expand understanding of tank service life and to meet Administrative Order 00-NWPKW-1250 requirements.
- # In FY 2002, activities associated with Tank Farm Restoration and Safe Operations (Project 97-D-402) including capital line-item funding will transfer to a new PBS (ORP-TW12, Waste Retrieval, Storage, and Disposal Construction).

Key Milestones

Start Interim Stabilization of two single-shell tanks BY -105 and 106 (D-001-09) (July 2001).
Reduce total organic complexant pumpable liquids to 5 percent of total volume from single-shell tanks (D-001-01V) (September 2001).
Start Interim Stabilization of four single-shell tanks U-108, U-107, S-111, SX-102 (D-001-11) (December 2001).
Reduce total liquids to 18 percent of total volume of single-shell tanks (September 2002).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

ORP-TW04 / Waste Retrieval, Storage and Disposal Operations 49,192 44,485 43,500

This project's mission is to retrieve wastes from the single-shell and double-shell tanks and the designated miscellaneous underground storage tanks and provide waste to the Waste Treatment and Immobilization Plant for treatment and immobilization.

This project will conduct demonstrations of single-shell tank retrieval technologies; mitigate potential environmental impacts from waste retrieval and tank closure activities through monitoring; characterization, and control of contaminates in the vadose zone; and closure of both the double-shell and single-shell tank farms. Beginning in FY 2002, this project will also be responsible for the operations of the facilities to interim store the high-level waste canisters until shipped to the National Repository and the storage and final near-surface disposal of the immobilized low-activity tank waste. These activities have been transferred from PBS ORP-TW09, Immobilized Tank Waste Storage and Disposal. The capital construction project 94-D-407, Initial Tank Retrieval System, which installs waste retrieval pumps and upgrades the waste transfer systems will transfer to new PBS ORP-TW12, Waste Retrieval, Storage, and Disposal Construction, in FY 2002.

- # Complete functions requirements and pre-conceptual design for the confined sluicing and robotic waste retrieval demonstration for Tank C-104.
- # Complete procurement of crawler based single-shell tank retrieval system demonstration.
- # Complete functions requirements and pre-conceptual design for saltcake retrieval demonstration in Tank S-112.
- # Complete functions and requirements for Tank S-102 retrieval demonstration.
- # Continue installation of the Retrieval Cold-Test Facility, which allows testing of single-shell tank retrieval technologies in a non-contaminated environment.
- # Update the single-shell Resource Conservation and Recovery Act Closure Work Plan.
- # Continue analysis for creating additional tank space to support future single-shell tank retrieval activities.
- # Continue characterization of waste management areas and field investigative report for S/SX tank farms.
- # Continue characterization of waste management area and field investigative report for B/BX/BY tank farms.
- # Initiate characterization of the waste management area for T/TX/TY tank farms.
- # Develop specifications for failed melters, glass samples, updating of disposal requirements, programmatic planning and reporting and issuance of the FY 2003 Performance Assessment.

Key Milestones

- # Completed systems design and operation strategy for tank leak monitoring and mitigation (December 2001).

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Submit annual update of single-shell tank retrieval sequence document (September 2001).
- # Submit annual progress report on waste tank leak monitor/detection and mitigation (September 2001).
- # Submit annual update of single-shell tank retrieval sequence document (September 2002).

ORP-TW05 / Process Waste Support 10,980 950 0

The Process Waste Support Project provides support to the Office of River Protection in management of the procurement for the Waste Treatment and Immobilization Plant. Due to the decision not to privatize the Waste Treatment and Immobilization Plant, the management support provided by this PBS is significantly reduced. As a result, this PBS will be closed after FY 2001 and the remaining work scope will be transferred to PBS ORP-TW11, Waste Treatment and Immobilization Plant Operations.

No activity in FY 2002. Activity transferred to ORP-TW11, Waste Treatment and Immobilization Plant Operations.

Key Milestones

- # Update the Interface Control Document Implementation Plan (September 2001).

ORP-TW06LT / Waste Treatment and Immobilization Plant Construction 105,673 376,171 500,000

This PBS funds Project 01-D-416, Waste Treatment and Immobilization Plant (formerly Privatization, Project 97-PVT-1, Tank Waste Remediation System Vitrification). The project's mission is to design, construct, and commission the Waste Treatment and Immobilization Plant, which consists of: the Pretreatment Facility, which separates the tank waste into a high-level waste stream and a low-activity waste stream; the Low-Activity Waste Vitrification Facility, which immobilizes the low-activity waste stream into glass for disposal site; and the High-Level Waste Vitrification Facility, which immobilizes the high-level waste into glass for interim storage until a National Repository is available.

This PBS supports the development of engineering information required during design, construction, and operations of the Plant, establishment and maintenance of the system level flow sheets, development of all permits and safety basis documents for construction and operations, and performance of pilot melter research and pretreatment requirement testing. All funding for this project, including activities normally funded from operating expense accounts, is requested within this single line-item.

Prior year funding was provided under the EM Privatization account for BNFL to perform these services. The BNFL contract was terminated in FY 2000.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Continue with detailed design of the Waste Treatment and Immobilization Plant.
- # Complete small-scale process and characterization of candidate feed samples.
- # Complete modeling of full-scale vitrification facility and melter development and testing of canisters, off gas systems, and glass product.
- # Submit to DOE, product and secondary waste plans and Environmental, Safety and Health deliverables.
- # Complete question and answer response for the Construction Authorization Request submittal, update the Limited Construction Authorization Request and Final Safety Analysis Report to support the Operations Authorization Request.
- # Development of operations procedures and training.
- # Initiate pretreatment facility construction.
- # Initiate low-activity waste vitrification facility construction.
- # Initiate high-level waste facility vitrification construction.
- # In prior years, $105,673,000 was appropriated for a privatized Vitrification Facility design in FY 2000; $376,171,000 was appropriated into this line-item in FY 2001; and $500,000,000 is requested in FY 2002.

Key Milestones

- # Award Waste Treatment Plant Contract (December 2000).
- # Select a commissioning subcontractor for the Waste Treatment Plant (April 2001).
- # Start construction of the Pretreatment Facility (July 2002).
- # Start construction of the High-Level Waste Facility (July 2002).
- # Start construction of the Low-Activity Waste Facility (July 2002).

ORP-TW08 / Process Waste Privatization Infrastructure 15,345 10,476 402

This project provides the road, electrical service, water services, liquid piping system tie-ins to support construction of the Waste Treatment and Immobilization Plant. Construction of line-item Project 99-D-403, Privatization Phase I Infrastructure, will be completed in FY 2002. Infrastructure operations costs such as utilities and site maintenance will be transferred to PBS ORP-TW11, Waste Treatment and Immobilization Plant Operations in FY 2002.

- # Complete project closeout in FY 2002.
- # Capital line-item funding to support Project 99-D-403, Privatization Phase I Infrastructure, was $13,988,000 in FY 2000 and $6,858,000 in FY 2001. No line-item funding is required in FY 2002.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

Key Milestones

Complete construction and startup of the Liquid Effluent System (April 2002).

ORP-TW09 / Immobilized Tank Waste Storage and Disposal Project 8,016 6,741 0

The Immobilized Tank Waste Storage and Disposal Project will provide final near-surface disposal on the Hanford Site for immobilized low activity tank waste, and interim storage for immobilized high-level waste. The activities associated with immobilized low activity and high-level waste performance assessments, system definitions, etc., will transfer to PBS ORP-TW04, Waste Retrieval, Storage, and Disposal Operations. The activities associated with the construction of the Immobilized High-Level Waste Interim Storage Facility (01-D-403) and the Immobilized Low Activity Waste Disposal Complex (including current year Preliminary Project Engineering and Design funding for the Proposed FY 2005 project) will transfer to new PBS ORP-TW12, Waste Retrieval, Storage, and Disposal Construction in FY 2002.

Key Milestones

Initiate the Immobilized High-Level Waste Interim Storage Facility Design (August 2001).

ORP-TW10 / RPP Management Support 51,661 74,986 68,486

The Management Support Project provides program management services and oversight for the River Protection Project. This project performs the activities necessary for the efficient, cost-effective operation of the River Protection Project.

The Office of River Protection approved an Accounting Practice Change for the direct funding of indirect expenses resulting in a streamlining of the rate structures. This change will simplify estimating and planning, eventually producing cost reductions and efficiencies for these processes. These new direct expenses will be funded under PBS ORP-TW10, RPP Management Support. The transfer reflected in PBS ORP-TW10, RPP Management Support, is offset by reductions in all other PBS's.

Maintain River Protection Project integrated baseline and change control process.

Issue annual Baseline Status Report.

Update and submit Project Baseline Summaries.

(dollars in thousands)

FY 2000	FY 2001	FY 2002

- # Complete annual worker self-assessment of the Tank Farm Contractor Voluntary Protection Program to confirm successful implementation and star status continuity, per Occupational Safety and Health Administration and DOE program criteria.
- # Continued Implementation of Strategic Plan developed/approved in FY 2000.
- # Update the River Protection Project Program Plan.
- # Update the Mission Analysis Report.
- # Perform administrative services associated with maintaining/tracking the fee earned by the Tank Farm and Waste Treatment contractor.
- # Maintain financial information systems needed to effectively operate the River Protection Project.
- # Manage the River Protection Project's allocation of Hanford Site Services, i.e., water, electrical utilities, sanitary water/sewer, roads, fire systems, courier support, personnel movers, stores delivery, etc. The cost of these services were transferred to this PBS as a result of an Accounting Practice Change.

Key Milestones

- # CH2M Hill Hanford Group, Inc. completed revised River Protection Project integrated baseline (September 2001).
- # Submit the annual Tank Farm Contractor baseline package fully integrated with the Waste Treatment Plant contractor (March 2002).
- # Submit the annual work analysis to the Office of River Protection (July 2002).

ORP-TW11 / Waste Treatment and Immobilization Plant Operations 0 0 4,000

Operate the Waste Treatment and Immobilization Plant, which is being constructed under PBS ORP-TW06LT, Waste Treatment and Immobilization Plant Construction. The Waste Treatment and Immobilization Plant is scheduled to start hot commissioning by December 2007.

Manage and fund infrastructure operations activities, required to support the Waste Treatment and Immobilization Plant. These activities have been transferred from PBS ORP-TW08, Process Waste Privatization Infrastructure in FY 2002.

- # Provide utility support to the Waste Treatment and Immobilization Plant construction site.
- # Provide support to the Interface Control Document Integrated Product Team.

ORP-TW12 / Waste Retrieval, Storage, and Disposal Construction 24,576 63,270 50,000

(dollars in thousands)

FY 2000	FY 2001	FY 2002

This new PBS funds Project 94-D-407, Initial Tank Retrieval System, (formerly included under PBS ORP-TW04, Waste Retrieval); and Project 97-D-402, Tank Farm Restoration and Safe Operations, (formerly included under PBS ORP-TW03, Tank Farm Operations). These projects will design and install the waste retrieval systems for 18 of the 28 double-shell tanks, perform the essential tank farms infrastructure upgrades to support waste feed delivery to the Waste Treatment and Immobilization Plant, and to correct environmental compliance deficiencies with the aging tank farms support systems.

- # Complete design and procurement for the Tank AN-101 retrieval system.
- # Continue procurement and initiate construction of the Tank AZ-101 retrieval system.
- # Initiate construction of the new waste transfer system piping.
- # Initiate infrastructure upgrades in the AP and AW tank farms.
- # Complete construction of upgrades to Tanks AZ-101 and AZ-102.
- # Continue construction of the Master Pump Shutdown System, Waste Transfer System, and the AW Farm Pit.
- # Upgrades to Tanks AN-101 and 104, and Phase 2 AN Farm Upgrades.
- # Initiate procurement of the AP Farm Heating, Ventilation, and Air Conditioning Phase 2.
- # Initiate design and construction of Phase 2 Upgrades to AZ and AY Farms.
- # The PBS includes project support (operating expense) and capital funding for the following projects:
  - < Project 94-D-407, capital line-item funding for Initial Tank Retrieval Systems, $4,060,000 in FY 2000; $17,347,000 in FY 2001; and $6,844,000 in FY 2002.
  - < Project 97-D-402, capital line-item funding for Tank Farm Restoration and Safe Operations $20,516,000 in FY 2000; $45,923,000 in FY 2001; and $33,473,000 in FY 2002.

Key Milestones
Start construction phase - River Protection Project Transfer System (September 2002).

Total, Hanford Site - Office of River Protection	**440,412**	**755,728**	**812,468**

Explanation of Funding Changes from FY 2001 to FY 2002

	FY 2002 vs. FY 2001 ($000)
ORP-RG01 / Office of Safety Regulation	
# Decrease of funds reflects transfer of direct cost activities for the Safety Office from the Richland Operations Office to the Office of River Protection. Indirect costs will be covered under PBS ORP-TW10, River Protection Program Management Support. . . .	-2,501
ORP-TW01 / Tank Waste Characterization	
# Decrease of funds reflects efficiencies and higher priority activities.	-226
ORP-TW02 / Tank Safety Issue Resolution Project	
# Decrease of funds reflects major work on mitigating the surface level rise issue and resolution of the associated unresolved safety question being completed before FY 2001, implementation of indirect/direct rate conversion, and transfer of Authorization Basis activities to PBS ORP-TW03, Tank Farm Operations.	-18,069
ORP-TW03 / Tank Farm Operations	
# Decrease of funds reflects transfer of activities associated with tank farm upgrades to new PBS ORP-TW12, Waste Retrieval, Storage and Disposal Construction and implementation of indirect/direct rate conversion in FY 2001. Decrease partially offset by transfer of Authorization Basis activities from PBS RL-TW02, Tank Safety Issue Resolution. Decrease in funding also reflects efficiencies and other priority activities. . . .	-11,773
ORP-TW04 / Waste Retrieval, Storage and Disposal Operations	
# Decrease in funds reflects transfer of activities associated with initial tank retrieval project to the new PBS ORP-TW12, Waste Retrieval, Storage, and Disposal Construction, and implementation of indirect/direct rate conversions in FY 2001. Decrease in funding also reflects efficiencies and other priority activities.	-985
ORP-TW05 / Process Waste Support	
# Decrease in funds reflects implementation of indirect/direct conversion in FY 2001, reduction in work scope requirements and the transfer of remaining activities to PBS ORP-TW11, Waste Treatment and Immobilization Plant Operations.	-950
ORP-TW06LT / Waste Treatment and Immobilization Plant Construction	
# Increase in funding will continue design and initiate construction of the Low Activity Waste Facility, the Pretreatment Facility, and the High-Level Waste Facility components of the plant.	123,829
ORP-TW08 / Process Waste Privatization Infrastructure	

	FY 2002 vs. FY 2001 ($000)
# Decrease in funding reflects completion of Project 99-D-403, Privatization Phase I Infrastructure Support, construction activities to provide site infrastructure services to the treatment facility, transfer of infrastructure support operations activities to PBS ORP-TW11, Waste Treatment and Immobilization Plant Operations, and implementation of indirect/direct conversion in FY 2001.	-10,074
ORP-TW09 / Immobilized Tank Waste Storage and Disposal Project	
# Decrease in funding reflects implementation of indirect/direct conversion in FY 2001 and transfer of activities associated with Low Activity Waste Disposal facility to new PBS ORP-TW12, Waste Retrieval, Storage and Disposal Construction.	-6,741
ORP-TW10 / RPP Management Support	
# Decrease in funding reflects efficiencies and other priority activities.	-6,500
ORP-TW11 / Waste Treatment and Immobilization Plant Operations	
# New PBS. Increase in funding reflects work scope transferred from PBS ORP-TW05, Process Waste Support, and PBS ORP-TW08, Process Waste Privatization Infrastructure.	4,000
ORP-TW12 / Waste Retrieval, Storage, and Disposal Construction	
# New PBS. Decrease in funding reflects sequencing work scope formerly in ORP-TW03, Tank Farm Operations, ORP-TW04, Waste Retrieval, Storage and Disposal Operations, and ORP-TW09, Immobilized Tank Waste Storage and Disposal to meet the schedule for the Waste Treatment and Immobilization Plant.	-13,270
Total Funding Change, Hanford Site - Office of River Protection	56,740

Capital Operating Expenses & Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	$ Change	% Change
General Plant Projects	32,605	26,472	17,780	-8,692	-32.8%
Capital Equipment	10,980	11,244	19,981	8,737	77.7%
Total, Capital Operating Expense	43,585	37,716	37,761	45	0.1%

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2000	FY 2001	FY 2002	Unappropriated Balance
Post 2006 - ORP						
01-D-416 Waste Treatment and Immobilization Plant, ORP	4,350,000	385,000 [a]	105,673 [a]	376,171 [a]	500,000	2,983,156
99-D-403 Privatization Phase I Infrastructure Support, ORP	25,585	4,739	13,988	6,858 [b]	0	0
97-D-402 Tank Farm Restoration and Safe Operations, ORP	216,960	26,345	20,516	45,923 [c]	33,473	90,703
94-D-407 Initial Tank Retrieval Systems, ORP	240,200	35,680	4,060	17,347 [d]	6,844	176,269
Subtotal Post 2006-ORP		451,764	144,237	446,299	540,317	3,250,128

[a] Funded/requested as Privatization in prior years. Privatization of this project was terminated in FY 2000.

[b] Reflects FY 2001 General Reduction of $950,000 and a rescission of $4,000. The original appropriation was $7,812,000.

[c] Reflects 1) the shift of selected Phase 2 scope to Phase 1; 2) changes in the safety authorization basis; and 3) FY 2001 rescission of $100,000. The original appropriation was $46,023,000.

[d] Reflects a reduction of $38,000 to support the FY 2001 rescission. The original appropriation was $17,385,000.

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2000	FY 2001	FY 2002	Unappropriated Balance
Post 2006						
00-D-401 Spent Nuclear Fuel Treatment and Storage Facility, SR	36,900	0	7,000	0	0	29,900
93-D-187 High-Level Waste Removal from Filled Waste Tanks, SR	967,200	278,171	15,487 [a]	27,153 [b]	6,754	639,635
Subtotal Post 2006		278,171	22,487	27,153	6,754	669,535
Total, Construction		729,935	166,724	473,452	547,071	3,919,663
Operating Expense Funded						
02-EXP Salt Processing Pilot Plant, SR	35,000	0	0	3,000	11,263	20,737
Total, Project Funding		729,935	166,724	476,452	558,334	3,940,400

[a] Reflects FY 2000 notification to allocate $6,500,000 of the $10,000,000 conference mark add-on for high-level waste removal activities. The original appropriation was $8,987,000.

[b] Reflects FY 2001 rescission of $59,000. Also a reduction for use of prior year balances of $2,479,000 will be applied against this project. The original appropriation was $27,212,000.

01-D-416, Waste Treatment and Immobilization Plant
Hanford Site, Washington (ORP-TW06LT)

(Changes from FY 2001 Congressional Notification are denoted with a vertical line [|] in the left margin.)

Significant Changes

- On May 8, 2000, Secretary of Energy Richardson announced that the privatization contract for design, construction, and operation of the Tank Waste Remediation System would be terminated. The Department had documented that the privatization contractor's proposal submitted on April 24, 2000, was unacceptable in the price, schedule, management, and business approach. Although the privatization contract was terminated, significant progress has been made in acquiring a robust technical design for the Waste Treatment and Immobilization Plant that meets or exceeds original technical requirements. The Department plans to fully utilize and build upon this design.

- As a result of the termination, there has been a change in the contracting strategy for construction of the facility to treat the high-level waste from a privatization approach to a more traditional government construction contract. Funding for this project transferred from the Privatization Account to the Post-2006 Completion Account by Congressional appropriation in FY 2001.

- On December 11, 2000, the Department awarded a contract to Bechtel Washington to continue with the design, construction, permitting, and commissioning of the Waste Treatment and Immobilization Plant facilities that will treat and immobilize Hanford tank waste. The contract was awarded a full month ahead of the schedule required by the Consent Decree administered by a Federal District Court in the State of Washington.

- This project is being renamed "Waste Treatment and Immobilization Plant" to reflect the change in contractual approach from privatization to a more traditional cost-plus incentive fee completion contract.

- The funding estimates reflect the current Waste Treatment and Immobilization Plant Baseline developed immediately after the termination of the privatization contractor. Cost estimates and funding requests are based upon the privatization contractor's proposed "brick and mortar" costs, plus estimates for management and contingency for a cost-plus-incentive-fee contract.

- Because the Waste Treatment and Immobilization Plant contract is a single purpose contract independent from the Tank Farm Contract work scope, all funds are requested as a single appropriation. The requested single line item will fund capital expenses including design and construction, as well as expense activities such as permitting and research and development to support detailed design. Therefore, no separate request is made for operating expenses in support of the Waste Treatment and Immobilization Plant until operations commence following commissioning.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2001 Budget Request *(Title I Baseline)* [a]	4Q 1998	2Q 2005	2001	2007	5,466,000	12,488,000
FY 2002 Budget Request (*Current Baseline Estimate*) [b]	" [c]	"	2002	2007	4,350,000	4,350,000

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Prior Year	393,673 [d]	338,673	324,584
2001	376,171 [e]	432,000	418,538
2002	500,000	500,000	430,609
2003	880,000	880,000	828,329
2004	678,901	678,901	799,444
2005	686,904	686,904	615,866
2006	408,167	408,167	432,874
2007	275,648	275,648	267,696
2008	137,010	137,010	168,068
2009	13,526	13,526	63,992
2010	0	0	0

[a] Total Project Cost/Total Estimated Cost based upon Privatization concept and included plant operations through FY 2018.

[b] The FY 2002 Total Project Cost/Total Estimated Cost based on traditional government construction contract.

[c] The A-E work initiated and funding provided under the Tank Waste Privatization Project.

[d] Prior Years appropriated under EM Privatization account reflect $97,000,000 Congressional Rescission in the FY 2001 Appropriation.

[e] Reflects FY 2001 Rescission of $829,000. The original appropriation was $377,000,000.

3. Project Description, Justification and Scope

Radioactive waste has been stored in large underground storage tanks at the Hanford Site since 1944. Approximately 53 millions gallons of waste containing approximately 240,000 metric tons of processed chemicals and 172 mega-curies of radionuclides are currently being stored in 177 tanks. These caustic wastes are in the form of liquids, slurries, saltcakes, and sludge. In 1992, the Tank Waste Remediation System Program was established to manage, retrieve, treat, immobilize, and dispose of these wastes in a safe, environmentally sound, and cost-effective manner. In FY 2001, as directed by Congress, the Tank Waste Remediation System was renamed the River Protection Project. The River Protection Project is managed by the Office of River Protection at the Hanford site in Washington State. The River Protection Project also includes efforts to resolve a number of safety concerns and technical issues. Of particular interest is addressing past leakage from some of the underground storage tanks. The leakage has resulted in contamination of the underlying ground column (vadose zone) and recent reports indicate that some of the leakage has permeated to a depth to cause contamination of the groundwater. Storage in the current tanks is very costly, and as the tanks age, potential for radioactive and chemical release will increase, although short-term risks are low. The River Protection Project will substantially decrease the long-term costs and provide protection of public health and safety and the environment by removing the waste from the tanks and placing it in a waste form suitable for long-term disposal.

The River Protection Project will implement cleanup under two contract vehicles.

- < The Tank Farm Contractor will provide for safe storage and retrieval of tank wastes, storage and disposal of immobilized waste, decontamination and decommissioning of tanks, and initiation of post closure monitoring of the tank farms.
- < The Waste Treatment Contractor will design, construct, and commission a Waste Treatment and Immobilization Plant and support transition of the plant into full operation. Operation of the Waste Treatment and Immobilization Plant is planned to be under a separate contract awarded after commissioning.

The River Protection Project pathway for cleanup is documented in the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. Under the Tri-Party Agreement, DOE, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology have agreed to a timetable for cleanup of the Hanford Site. A major objective in that timetable is to accomplish the first phase (Phase I) of the treatment effort by immobilizing approximately 10 percent of the tank waste by mass and 25 percent of the tank waste by radioactivity by 2018. The objective associated with Phase I will be met utilizing the Waste Treatment and Immobilization Plant. Phase II will accomplish immobilization of the remaining tank waste.

Until spring 2000, the Department's acquisition strategy for construction of the Waste Treatment and Immobilization Plant was planned to occur through a privatization contract. However, the Department determined that the privatization contractor's April 24, 2000, proposal for the Hanford privatization contract was unacceptable in many areas including cost, schedule, management, and business approach. The price of the

proposal included high contingency, fees, and return on investment, which essentially shifted the financial risk from the contractor back to the Federal government. Thus a key benefit of privatization, in this case, was lost. Therefore, on May 8, 2000, then Secretary Richardson announced that the privatization contract with BNFL, Inc., would be terminated. Although the privatization contract was terminated, significant progress has been made in acquiring a robust technical design for the Waste Treatment and Immobilization Plant. Process tests with simulated and actual waste have demonstrated that the melter and pretreatment technologies meet or exceed requirements. These test results have been independently verified.

The Department awarded a competitively bid, non-privatized design and construction contract for the Waste Treatment and Immobilization Plant on December 11, 2000, a full month ahead of schedule. Bechtel Washington Group, the Waste Treatment and Immobilization Plant contractor, will continue to build upon the design initiated and developed by the prior privatization contractor. Design work will entail development of all structural, mechanical, electrical, and process drawings to a degree of detail sufficient for construction.

The Waste Treatment and Immobilization Plant Contractor will subcontract for operability and commissioning support. After commissioning, DOE will award a separate contract to operate the Waste Treatment and Immobilization Plant and treat and immobilize approximately 10 percent of the Hanford tank waste by mass and 25 percent of the Hanford tank waste by radioactivity by 2018.

The Waste Treatment and Immobilization Plant Contractor will review the privatization contractor's Waste Treatment and Immobilization Plant design and supporting information; complete process and facility design; perform construction and procurement; conduct acceptance testing; select and integrate a subcontractor into the project team to provide the necessary operability and commissioning capability; and conduct all required environmental, safety, quality, and health actions. From contract award, the Waste Treatment and Immobilization Plant Contractor will be the design authority responsible for the design of the Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant Complex currently consists of five separate facilities: Pretreatment facility, Low Activity Waste Conditioning facility, Low Activity Waste Vitrification facility, High-Level Waste Vitrification facility, and the Balance of Facilities. The Pretreatment facility will separate the Hanford feed waste into low-level and high-level fractions. The high-level fraction is sent to the High-Level Waste Vitrification facility for immobilization. The low-level fraction is sent to the Low Activity Waste Conditioning facility for additional treatment prior to being immobilized in the Low Activity Waste vitrification facility. Office facilities, chemical storage, site utilities, and infrastructure are provided as part of the Balance of Facilities.

Schedule performance is an important consideration for the River Protection Project, and specifically the Waste Treatment and Immobilization Plant. The Waste Treatment and Immobilization Plant contract includes several key milestones, the most important of which is the start of hot commissioning by December 2007. The Department will seek to accelerate the project by providing contractor fee incentives to optimize life-cycle performance, cost, and schedule, including the process design, facility design, and technologies. The current Waste Treatment and Immobilization Plant design provides a reference solution that meets project requirements, but has significant potential for optimization. The Department will expect full Waste Treatment

and Immobilization Plant Contractor accountability for performance, cost, and schedule throughout the contract period of performance.

This project has a contingency of $350,000,000 (8 percent) of the Total Estimated Cost, which is on the low side of the contingency allowance per Chapter 11 of DOE G 430.1-1. Project contingency is based on a risk assessment of design maturity, work complexity and project uncertainties. The assessment evaluated the following criteria: weather, unknown interferences, unknown tie-ins, rework, unknown special work procedures, operations impacts, changing waste disposal requirements, Health Physics Technician support, safety class/regulatory changes, contamination/radiation changes, longer project duration, schedule conflicts, and maturity of work definition.

The FY 2001 appropriation of $376,171,000 is being used by the Waste Treatment and Immobilization Plant contractor to continue detailed design, engineering, long-lead procurement, and planning. Many of the activities listed below are multi-year activities and some carry on through FY 2002 and FY 2003, or beyond. The work that will be funded in FY 2001 includes the following:

- Preparation of Regulatory documentation
- Ion Exchange Testing for radionuclides removal
- Preparation of procurement specifications for piping fabrication, Heating Ventilation, and Air Conditioning, stainless steel liner plate, roofing and siding, rebar and embeds.
- Initiation of Instrumentation and Control Design Activities.
- Continue seismic analysis of facilities.
- Continue civil and structural detail drawings of all facilities.
- Full scale Melter Design starts
- Initiate performance testing of the canister design
- Continue primary and secondary Off-Gas System development
- Continue preparation of the piping and instrumentation drawings
- Continue preparation of Control System Drawings
- Continue preparation of Piping Support Drawing
- Continue development of the Mechanical Equipment Specifications
- Continue small scale testing of the vitrification processes
- Continue regulatory permitting activities
- Initiate Land Disposal Requirement Petitions
- Continue Pretreatment process testing of unit operations

- < Continue development testing of unit operations
- < Continue design of underground utilities
- < Initiate facility site preparation for all facilities
- < Continue design of site facilities (steam, water, electrical)

The FY 2002 appropriation request of $500,000,000 will be used to continue detailed design, engineering, long-lead procurement, planning, and initiate construction. Many of the activities listed below are multi-year activities initiated in FY 2001 and carrying through FY 2002 and FY 2003, or beyond. The work that will be funded in FY 2002 includes the following.

- < Continue development of electrical component specifications
- < Completion of seismic analysis
- < Continue Ion Exchange Testing for radionuclides removal
- < Continue preparation of procurement specifications for piping fabrication, Heating, Ventilation, and Air Conditioning systems, stainless steel liner plate, roofing and siding, rebar and embeds.
- < Initiate procurement of electrical equipment, fabrication of tanks and vessels, wall boxes and cabinets.
- < Continuation of Instrumentation and Control Design.
- < Continue civil and structural detail drawings.
- < Low Activity Waste Facility construction starts.
- < Pretreatment Facility construction starts.
- < High-Level Waste Facility construction starts.
- < Continue performance testing of the canister design.
- < Continue primary and secondary Off-Gas System Development.
- < Continue preparation of the Piping and Instrumentation Drawings.
- < Continue preparation of Control System Drawings.
- < Continue preparation of Piping Support Drawing.
- < Continue development of the Mechanical Equipment Specifications.
- < Continue small scale testing of the vitrification processes.
- < Continue regulatory permitting activities.
- < Continue Land Disposal Requirement Petitions.

- < Continue fabrication of other mechanical equipment.
- < Continue Pretreatment process testing of unit operations.
- < Continue development testing of unit operations.
- < Complete design and initiate construction of underground utilities.
- < Complete facility site preparation for all facilities.
- < Initiate construction of site facilities (steam, water, electrical).

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Facility Construction	$4,350,000	N/A
Facility Operations	$0	N/A
TOTAL	$4,350,000	N/A

The cost estimate was developed from the BNFL cost estimate provided to DOE on April 24, 2000, as part of the Tank Waste Remediation System Privatization contract. Since there were areas of the BNFL cost estimate that DOE believed to excessive (i.e. management costs and contingency) the original estimate for these areas were dramatically reduced. The contingency costs were reduced from $500,000,000 to $350,000,000 and there were portions of the management costs that were completely eliminated. The Department agreed with the "brick and mortar" costs proposed by BNFL and therefore did not propose any dramatic changes. The use of the BNFL cost estimate provides DOE with a cost, schedule, technical and risk baseline for comparison to any future baseline changes.

5. Method of Performance

Schedule performance is an important requirement for the Waste Treatment and Immobilization Plant Contract. The Waste treatment and Immobilization Plant Contract includes several key milestones, most important is the start of hot commissioning by December 2007. The Department will seek to improve the Waste Treatment and Immobilization Plant by incentivizing the Contractor, Bechtel Washington, to optimize life-cycle performance, cost, and schedule of the Waste Treatment and Immobilization Plant, including the process design, facility design, and technologies. The Waste Treatment and Immobilization Plant Conceptual Design provides a reference solution that appears to meet project requirements, but has significant potential for optimization. The Department will expect full Contractor accountability for performance, cost, and schedule throughout the contract period of performance.

The project has currently met the intent of DOE Order 413.3 requirements for Critical Decisions 0, 1, 2, and 3. Critical Decisions 0 and 1, which established the need for waste treatment capability and the design approach,

were completed under the former privatization approach. The requirements for Critical Decisions 2 and 3, which establish needed confidence in the design and cost estimate to permit final design and construction to move forward, were met during the process of selecting a contractor to complete design, construction, and commissioning of the WTP. To date, the DOE has completed a Government Fair Cost Estimate (GFCE), a Request for Proposals, and selected a contractor based on two bids that were within 5 percent of the GFCE. Further, the DOE has funded and completed an External Independent Review. The technical requirements of the project have been determined through evaluation of waste characteristics and performance of ongoing research and development activities to mitigate potential project risks. An external review of the technologies to be used in the WTP was also performed. Results indicated that the DOE is proceeding down a prudent technological path for treating the wastes. A revised project baseline, reflecting the plans of the construction contractor, Bechtel Washington, will establish detailed project cost, scope, and schedule requirements. It will be completed in April 2001. The contract contains numerous incentives to assure the contractor meets cost and schedule requirements and a large portion of the incentive fee is associated with the successful commissioning and hot start of the facility.

The current baseline milestones for the project are included in Table 5.1. The baseline for this project has not changed as a result of contract award, but may change in the May 2001 timeframe following review by the new contractor of the cost, schedule, and technical requirements.

Table 5.1

Treatment and Immobilization Milestones

Milestone Title	Date
Start Construction of the Pretreatment Facility	July 8, 2002
Start Construction of the High-Level Waste Facility	July 16, 2002
Start Construction of the Low Activity Waste Facility	July 29, 2002
Complete Design of the Pretreatment Facility	October 1, 2003
Complete Design of the Low Activity Waste Facility	December 29, 2004
Complete Design of the High-Level Waste Facility	February 16, 2005
Complete Construction - Low Activity Waste	March 2, 2006
Complete Construction - Pretreatment	March 16, 2006
Complete Construction - High-Level Waste	September 28, 2006
Initiate Pretreatment Hot Start	May 2, 2007
Initiate Pretreatment Services	November 28, 2008
Initiate High-Level Waste Treatment Services	July 2, 2008

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost						
Facility cost						
Design	0	324,584	370,597	350,311	337,400	1,382,892
Construction	0	0	41,941	70,298	2,198,098	2,310,337
Total facility costs (Federal and Non-Federal)	0	324,584	412,538	420,609	2,535,498	3,693,229
Other project costs						
Conceptual design cost	0	0	0	0	0	0
Other project-related costs	0	0	6,000	10,000	640,771	656,771
Total other project costs	0	0	6,000	10,000	640,771	656,771
Total project costs (TPC)	0	324,584	418,538	430,609	3,176,269	4,350,000

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.) [a]	114,000	TBD
Annual facility maintenance and repair costs	TBD	TBD
Other annual costs [b]	TBD	TBD
Total related annual funding *(operating from FY 1998 through FY 2010)*	114,000	0

[a] The total operating costs for all facilities that constitute the Waste Treatment and Immobilization Plant are included in this estimate. This estimate includes the estimated maintenance and repair costs. This is an estimated average cost for the operation of the Waste Treatment and Immobilization Plant.

[b] No estimate currently exists for this work scope.

97-D-402, Tank Farm Restoration and Safe Operations, Hanford Site, Washington (ORP-TW12)

(Changes from FY 2001 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

None.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1997 Budget Request *(Preliminary Estimate)*	2Q 1997	2Q 2004	1Q 1999	3Q 2005	248,480	289,239
FY 1998 Budget Request *(Preliminary Estimate)*	"	3Q 2004	3Q 1998	3Q 2007	206,000	273,000
FY 1999 *Budget Request (Title I Baseline)*	"	"	1Q 1998	"	232,700	301,500
FY 2000 Budget Request *(Current Baseline Estimate)*	"	2Q 2004	"	"	"	"
FY 1999 Reprogramming *Request (Current Baseline Estimate)*	"	"	"	"[a]	216,960[b]	285,260[c]
FY 2001 Budget Request *(Current Baseline Estimate)*	"	4Q 2004	"	3Q 2005	"	"
FY 2002 Budget Request (*Current Baseline Estimate)*	"	"	"	"	"	"

[a] Delays to Phase I due to reprogramming do not cause an overall project schedule change.

[b] The total estimated cost of $232,700,000 based on the Conceptual Design Report dated November 1996 was reduced by $15,740,000 due to the deletion of liquid-level monitors and continuous air monitors from the project scope. Replacement of these devices was required on an expedited basis to meet regulatory and safety demands and is being performed as a maintenance activity.

[c] The total project cost of $301,500,000 based on the Conceptual Design Report dated November 1996 was reduced by $16,240,000 ($15,740,000 capital funds and $500,000 for other project costs).

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1997	7,584	7,584	3,864
1998	13,961	13,961	9,596
1999	4,800[a]	4,800	12,077
2000	20,516[b]	20,516	20,747
2001	45,923[c]	45,923	45,923
2002	33,473	33,473	33,473
2003	38,396	38,396	38,396
2004	34,108	34,108	34,108
2005	18,199	18,199	18,199

3. Project Description, Justification and Scope

The Tank Farm Restoration and Safe Operations project will provide upgrades for selected tank farm instrumentation control, tank ventilation, waste transfer, and electrical systems in order to restore these systems to an acceptable design basis. Phase I of the project focuses primarily on improvements needed to support waste processing and disposal and routine operations of existing double-shell tank farm facilities during the River Protection Project's mission. This project is integrated with other planned/ongoing upgrades, waste retrieval, and major maintenance activities to ensure that the combined upgrades are performed in a cost-effective manner and that they will adequately support the overall River Protection Project mission.

During Phase I, the project will provide major upgrades to the waste transfer systems, the master pump shutdown system, and the leak detection system. During Phase II, the project will provide upgrades to ventilation and electrical systems and additional transfer systems.

Waste Transfer

New valve manifold assemblies will be provided in selected pits used for the double-shell tank waste transfer operations. In addition, the project will install three new transfer routes (pipe-in-pipe configuration, equipped with appropriate leak detection and cathodic protection capabilities) in the A Farm Complex

[a] Reflects original appropriation of $22,723,000 less the reduction of $17,923,000 of FY 1999 funds for Congressional reprogramming. The reprogramming was possible because the project schedule has been revised due to a change in feed delivery need date following award of the private vitrification contract.

[b] Appropriations for FY 2000-2007 adjusted to reflect budget requirements of the revised project schedule.

[c] Reflects: 1) the shift of selected Phase 2 scope to Phase 1; 2) changes in the safety authorization basis; and 3) FY 2001 rescission of $100,000. The original appropriation was $46,023,000.

(200 East Area), and three existing transfer lines will be replaced with new lines. Existing pits used for the double-shell tank waste transfer operations will have special protective coating applied to the walls, floor, and underside of cover blocks to facilitate decontamination and support compliance with regulatory requirements for secondary containment. New transfer systems will be fully compliant with Resource Conservation and Recovery Act requirements and with Washington State regulations governing hazardous waste handling.

Instrumentation

The project will upgrade the master pump shutdown system and associated alarms. All new instrumentation/control equipment will be capable of providing remote readout and/or alarm at selected manned facilities, resulting in a significant reduction in the amount of manual field data collection in the double-shell tank farms, thereby improving worker efficiency and reducing worker stay time in the radiation zones (implementing an as low as reasonably achievable {ALARA} principle). No new single-shell tank instrumentation is planned to be provided by this project. No liquid level monitors or continuous air monitors will be provided by this project.

Tank Ventilation

The project will replace the existing primary ventilation systems for Tank Farms 241-AN, -AP, and - AW with new, high-capacity exhaust filtration systems. A new exhaust stack, along with stack effluent monitoring and ventilation control equipment, will be included in these upgrades. New seal pots and associated condensate piping will be installed to support the collection of condensate from the new ventilation systems and return it to the primary tank system. The ventilation systems will be designed to facilitate future installation of additional effluent control equipment, if needed. The project also will provide a new annulus ventilation system for the 241-SY Tank Farm. The new annulus and primary ventilation systems will be connected to existing underground ductwork. Existing filter trains replaced by this project will be removed and disposed.

The ventilation upgrades will improve worker safety and reduce the risk of radioactive and/or hazardous material releases to the environment by providing improved confinement and monitoring of tank emissions. New off gas treatment/filtration systems and effluent monitoring systems will be provided to ensure compliance with applicable Federal, State, and local emission standards.

Electrical Distribution

Existing electrical power supplies for the equipment supporting the double-shell tanks primary/annulus ventilation systems will be upgraded and/or replaced to provide backup power capabilities. In addition to providing improved reliability for ventilation systems, these upgrades will allow shutdown of the main switchgear to permit routine preventative maintenance to be performed. No new safety class power systems are planned as part of this project.

The purpose of Phase II of this project is to improve reliability of safety-related systems, reduce on-site health and safety hazards, reduce the risk of unmonitored releases to the environment, support waste treatment and

support the double-shell tanks functions by restoring the selected tank farm facilities and systems. Assessments of the tank farms' instrumentation/control, ventilation, waste transfer, and electrical systems, which included physical inspections/condition assessments and engineering analyses to determine compliance with applicable requirements, have identified the need for extensive infrastructure restoration in order to meet the overall mission goals and support safe operation and maintenance activities.

Because of their age, many infrastructure systems and components have either exceeded their useful service lives and can be expected to fail in the near-term; have deteriorated beyond repair and must be replaced to ensure continued reliable operation; or operate outside current environmental, health, and safety regulations. Due to the age and obsolescence of the existing equipment, it is often difficult to obtain replacement parts for failed or degraded components. These conditions, coupled with the problems associated with performing maintenance work in contaminated areas, have resulted in high operation and maintenance costs for the Tank Farm facilities.

| The project currently has a contingency of $45,450,000 which is within the contingency allowance per Chapter 11 of DOE G 430.1-1. Project contingency is based on a risk assessment of design maturity, work complexity, and project uncertainties. The assessment evaluated the following criteria: weather, unknown interferences, unknown tie-ins, rework, unknown special work procedures, operations impacts, changing waste disposal requirements, Health Physics Technician support, safety class/regulatory changes, contamination/radiation changes, longer project duration, schedule conflicts, maturity of work definition, and Job Control System package impacts. A summation of risk score assigned to each of the above criteria yields a composite contingency of 21 percent of the Total Estimated Cost.

| The FY 2001 appropriation is being used to:

- Initiate construction of the Master Pump Shutdown System;
- Initiate procurement and construction of the Waste Transfer System;
- Complete construction of AY Farm Pit Upgrades;
- Initiate construction of AW Farm Pit Upgrades;
- Continue construction of upgrades to Tanks AZ-101 and 102;
- Complete design and procurement and initiate construction of Phase II AN Farm Upgrades;
- Initiate procurement and construction of upgrades to Tanks AN-101 and -104;
- Initiate design of AP Farm (Phase II); and
- Continue project management.

| The FY 2002 appropriation will be used to:

- Continue construction of the Master Pump Shutdown System;
- Continue construction of the Waste Transfer System;

- Continue construction of the AW Farm Pit Upgrades;
- Continue construction of upgrades to Tanks AZ-101 and -102;
- Initiate procurement of AP Heating, Ventilation, and Air Conditioning (Phase II);
- Continue construction of upgrades to Tanks AN 101 and 104;
- Continue construction of Phase II AN Farm Upgrades; and
- Continue project management.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Request
Design phase		
Preliminary and final design costs (11.9% of total estimated cost (TEC))	25,848	25,909
Design management costs (4.0% of TEC)	8,680	2,051
Total, Engineering, design, inspection, and administration of construction costs (15.9% of TEC)	34,528	27,960
Construction phase		
Buildings and improvements to land	46,618	12,330
Specialized equipment	21,474	64,880
Other (major utilities/comp items, specialized facilities, etc.)	7,150	12,000
Removal cost less salvage	4,784	4,748
Project management	18,014	14,757
Inspection, design and project liaison, testing, checkout and acceptance	27,418	24,509
Construction management (5.3% of TEC)	11,524	13,866
Total, construction costs	136,982	147,090
Contingencies		
Design phase (2.6% of TEC)	5,642	6,075
Construction phase (18.3% of TEC)	39,808	35,835
Total, contingencies (20.9% of TEC)	45,450	41,910
Total, line item costs (TEC)	216,960	216,960

5. Method of Performance

The CH2M-Hill Hanford Group will be responsible for overall project management and integration services, as well as for coordination of permitting and safety analysis work in support of the project. The Engineer/Constructor Contractor will perform definitive design, inspection, and construction management activities. Construction work in radiologically contaminated areas, utility tie-ins, and demolition work will also be performed by the Engineer/Constructor. To the extent feasible, construction in uncontaminated areas and procurement shall be accomplished by fixed-price contracts awarded on the basis of competitive bidding. Burial of contaminated materials, health physics technician support, and startup testing/readiness review support will be performed by the CH2M-Hill Hanford Group.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost								
Facility cost								
Design	3,864	5,933	8,087	4,829	3,117	3,137	11,203	40,170
Construction	0	3,663	3,990	15,918	42,806	30,336	80,077	176,790
Total facility costs (Federal and Non-Federal)	3,864	9,596	12,077	20,747	45,923	33,473	91,280	216,960
Other project costs								
Conceptual design cost	13,324	0	0	0	0	0	0	13,324
NEPA documentation costs	12	0	0	0	0	0	0	12
Other project-related costs	11,470	1,790	5,700	5,700	5,757	9,301	15,246	54,964
Total other project costs	24,806	1,790	5,700	5,700	5,757	9,301	15,246	68,300
Total project costs (TPC)	28,670	11,386	17,777	26,447	51,680	42,774	106,526	285,260

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc)	NA	NA
Annual facility maintenance and repair costs	NA	NA
Other annual costs	NA	NA
Total related annual funding	NA	NA

94-D-407, Initial Tank Retrieval Systems, Hanford Site, Washington (ORP-TW12)

(Changes from FY 2001 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- Subprojects 01 and 02 tank selections were realigned to better facilitate design and construction efforts within individual double shell tank farms. Subproject 01 contains ten waste feed tanks in the AN, AP, and AZ tank farms and the waste transfer system from the tank farms to the Waste Treatment and Immobilization Plant. Subproject 02 contains eight waste feed tanks in the AW, AY, and SY tank farms and ventilation upgrades in the AY and AZ tank farms.
- The tank realignment exchanged two tanks (one requires 2 mixer pumps and one requires 4 mixer pumps) from Subproject 01 with three tanks (one requires 2 mixer pumps and two require no mixer pumps) from Subproject 02. In addition, the waste transfer system from the tank farms to the Waste Treatment and Immobilization Plant was moved from Subproject 02 to Subproject 01. This scope transfer was required to provide the minimum feed requirements within the feed envelopes as planned for the vitrification plant. These scope adjustments resulted in a total estimated cost increase for Subproject 01 from $202,000,000 to $249,200,000. Subproject 02 conceptual design total estimated cost is slightly higher ($280,200,000), than Subproject 01 due to a number of factors: 1) Work for Subproject 02 is not planned to commence until FY 2006 which will result in higher escalation costs; 2) Subproject 02 contains fewer tanks, but all eight require full mixing capability. Six require 2 mixer pumps and two require 4 mixer pumps; 3) Subproject 02 removes significantly more contaminated equipment, installs in-farm transfer lines, and ventilation upgrades.
- Cost adjustments may be required as designs are completed and vitrification feed schedules are clarified, but no significant growth in project scope is anticipated through the completion of upgrades for requirements for feed to the Waste Treatment and Immobilization Plant.
- An External Independent Review was conducted on Subproject 01 in FY 2000. There were no findings and all recommendations were addressed and have been closed.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
Subproject 01						
FY 1994 Budget Request *(Preliminary Estimate)*	2Q 1994	4Q 1998	1Q 1995	2Q 2000	210,000	245,000
FY 1995 Budget Request *(Preliminary Estimate)*	"	4Q 1999	4Q 1995	2Q 2001	"	"
FY 1996 Budget Request *(Preliminary Estimate)*	"	2Q 2008	3Q 1996	2Q 2010	315,000	375,200
FY 1997 Budget Request *(Title I Baseline*	4Q 1994	4Q 2007	4Q 1996	"	304,300	358,200
FY 1998 Budget Request *(Title I Baseline)*	"	4Q 2004	2Q 1997	3Q 2008	202,000	229,100
FY 1999 Budget Request *(Current Baseline)*	"	"	1Q 2001	2Q 2010	"	"
FY 2000 Budget Request *(Current Baseline)*	"	"	"	"	"	"
FY 2001 Budget Request *(Current Baseline)*	"	4Q 2003	"	"	"	"
FY 2002 Budget Request *(Current Baseline)*	"	3Q 2004	3Q 2000	1Q 2016	249,200	283,700
Subproject 02						
FY 2002 Budget Request (*Current Baseline)*	3Q 2006	1Q 2014	1Q 2007	2Q 2016	280,200	317,100

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Subproject 01			
1994	1,000 [a]	1,000	509
1995	3,380 [b]	3,380	3,151
1996	5,600 [c]	5,600	2,659
1997	7,600 [d]	7,600	6,231
1998	10,100 [e]	10,100	7,672
1999	8,000 [f]	8,000	4,657
2000	4,060	4,060	5,066
2001	17,347 [g]	17,347	12,577
2002	6,844	6,844	20,033
2003	29,366	29,366	29,367
2004	24,943	24,943	24,943
2005	12,013	12,013	12,013
2006	9,458	9,458	9,910
2007	16,250	16,250	17,015
2008	19,603	19,603	19,447
2009	13,000	13,000	12,314

[a] Reflects reduction of $6,000,000 for uncosted offset from original appropriation of $7,000,000.

[b] Reflects reduction of $9,020,000 of FY 1995 funds for Productivity Savings and reduction of $5,300,000 current year funds due to rescission from original appropriation of $17,700,000.

[c] Reflects reduction of $6,400,00 to meet uncosted offset for FY 1996 from original appropriation of $12,000,000.

[d] Reflects reduction of $5,000,000 for internal reprogramming by the Richland Operations Office from the original appropriation of $12,600,000. The reprogramming moved $5,000,000 to Project 89-D-173, Tank Farm Ventilation Upgrades.

[e] Reflects reduction of $5,000,000 for internal reprogramming by the Richland Operations Office from the original appropriation of $15,100,000. The reprogramming moved $5,000,000 to operating expenses to extend the existing privatization Phase 1A contract from May 1998 until Phase 1B contract was signed August 1998.

[f] Reflects reduction of $560,730 for uncosted offset and $24,299,270 for congressional reprogramming from the original appropriation of $32,860,000. The FY 1999 capital funding was available for reprogramming because construction work planned for the project has been deferred. The scheduled need date for waste feed delivery in the contract between DOE and BNFL does not require the project to begin construction until FY 2001.

[g] Reflects FY 2001 rescission of $38,000. The original appropriation was $17,385,000.

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2010	16,000	16,000	16,261
2011	13,000	13,000	13,709
2012	12,000	12,000	8,911
2013	9,000	9,000	10,191
2014	6,000	6,000	7,682
2015	4,636	4,636	1,493
2016	0	0	3,389
Subproject 02			
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
2006	3,000	3,000	2,820
2007	16,500	16,500	15,430
2008	26,000	26,000	25,910
2009	64,000	64,000	63,060
2010	68,000	68,000	66,450
2011	50,000	50,000	50,760
2012	36,000	36,000	36,000
2013	16,700	16,700	19,770

3. Project Description, Justification and Scope

The selected feed and staging tanks contain both supernatant liquids and settled solids, most of which must be mixed before transfer for processing or storage. Initial tank design did not anticipate solid waste transfers, but consolidation and concentration of wastes stored in these tanks, as well as feed specifications supporting vitrification processing, have made such systems necessary. The consolidation of wastes stored in these double shell tanks has supported waste removal from older design and leaking single shell tanks, thereby relieving threats to the environment. Concentration has avoided the need for construction of additional tanks. Additionally, waste mixing and concentration will mitigate safety concerns relating to radiolytic generation of flammable gasses within stored waste.

This project includes two subprojects that will retrieve waste from eighteen double-shell tanks.

Subproject 01

TEC	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Construction Start - Completion Date
249,200	35,680	4,060	17,347	6,844	185,269	3rd Qtr. 2000 - 1st Qtr. 2016

Subproject 01 will provide mixing and pumping systems for the retrieval of radioactive wastes from ten double-shell tanks at Hanford and the waste transfer system between the existing tank farms and the Waste Treatment and Immobilization Plant. The typical retrieval system for the selected tanks consists of 300 horsepower mixer pumps to mobilize solids in the tank and a transfer system for removal of the tank contents. Tank internal components, such as thermocouple trees, will be replaced with higher strength equipment to withstand the forces induced by the mixer pumps. Monitoring and control systems will be installed to measure performance of the mixer pumps and tank operations.

Subproject 01 is at the Title II design maturity level and has a contingency of $25,720,000, which is within the contingency allowance per Chapter 11 of DOE G 430.1-1. Project contingency is based on a risk assessment of design maturity, work complexity, and project uncertainties. The assessment evaluated the following criteria: weather, unknown interferences, unknown tie-ins, rework, unknown special work procedures, operations impacts, changing waste disposal requirements, Health Physics Technician support, safety class/regulatory changes, contamination/radiation changes, longer project duration, schedule conflicts, maturity of work definition, and Job Control system package impacts. A summation of the risk scores assigned to each of the above criteria yields a composite contingency of 10.3 percent of the total Estimated Cost.

The FY 2001 funding will be used for:

- Design of the Tank AZ-101 and Tank AN-101 retrieval systems;
- Early procurement for Tank AZ-101;
- Continue construction of tank farm infrastructure upgrades;
- Initiate design of the waste transfer system; and
- Continue project management.

The FY 2002 budget request will be used to:

- Continue design and procurement for the Tank AN-101 retrieval system;
- Continue procurement and initiate construction of the Tank AZ-101 retrieval system;
- Continue waste transfer system design and initiate long-lead procurement; and
- Continue project management.

Subproject 02

TEC	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Construction Start - Completion Date

280,200	0	0	0	0	280,200	1st Qtr. 2007- 2nd Qtr. 2016

Subproject 02 (Waste Feed Delivery System) will provide waste retrieval and staging systems for eight additional double shell tanks, ventilation upgrades and waste transfer components. These upgrades will provide both High-Level Waste and Low Activity Waste feed and staging capabilities determined necessary for the Waste Treatment and Immobilization Plant. Because of the nature of the wastes being retrieved and the mission of the tanks (waste feed staging), both mixer and transfer pumps will be required in all eight tanks.

Subproject 02 will provide double shell tank upgrades or equipment additions for waste mobilization, preparation and transfer for feed blending/preparation and staging prior to being sent to the Waste Treatment and Immobilization Plant. The design and construction effort for each tank will typically include pumps, valves, jumpers, control instrumentation, utilities, chemical addition and dilution systems, ventilation and pit upgrades, and piping systems. This subproject will also be responsible for removing and disposing of some existing in-tank equipment including instrumentation, pumps, piping, jumpers, and valves.

4. Details of Cost Estimate [a] [b]

(dollars in thousands)

	Current Estimate	Previous Estimate
Subproject 01		
Engineering, design, inspection, and administration of construction costs		
Preliminary and final design costs (10.4% of total estimated cost (TEC))	25,870	19,680
Design management costs (2.3% of TEC)	5,720	4,330
Project management costs (4.4% of TEC)	10,930	7,760
Total, engineering, design, inspection, and administration of construction costs (17.1% of TEC)	42,520	31,770
Construction Costs		
Buildings & improvements to land	300	930
Specialized equipment	85,340	68,970
Other (major utilities/comp items, specialized facilities, etc.)	13,350	18,780
Removal cost less salvage	14,620	14,050
Inspection, design and project liaison, testing, checkout and acceptance	22,370	19,450
Construction management (11.9% of TEC)	29,560	23,080
Project management costs (6.2% of TEC)	15,420	9,070

[a] Subproject 01 estimate is based on the July 2000 estimate reflecting realignment of tank assignments between the two subprojects and the transfer of the AP Tank Farm work scope.

[b] Escalation rates were calculated from the January 2000 update of the economic escalation price change indices for DOE construction projects by the Office of Infrastructure Acquisition, FM-50.

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, construction costs	180,960	154,330
Contingencies		
Design phase (1.3% of TEC)	3,120	20
Construction phase (9.1% of TEC)	22,600	15,880
Total, contingencies (10.3% of TEC)	25,720	15,900
Total, line item costs (TEC)	249,200	202,000
Subproject 02		
Engineering, design, inspection, and administration of construction costs		
Preliminary and final design costs (8.4% of total estimated cost (TEC))	23,537	9,675
Design management costs (2.9% of TEC)	8,126	
Project management costs (0.9% of TEC)	2,522	
Total, engineering, design, inspection, and administration of construction costs (12.2% of TEC)	34,185	9,675
Construction Costs		
Buildings & improvements to land	1,740	
Specialized equipment	88,020	
Other (major utilities/comp items, specialized facilities, etc.)	24,177	
Removal cost less salvage	30,529	
Inspection, design and project liaison, testing, checkout and acceptance	11,324	
Construction management (9.6% of TEC)	26,900	
Project management costs (5.1% of TEC)	14,290	
Total, construction costs	196,980	0
Contingencies		
Design phase (2.4% of TEC)	6,725	
Construction phase (15.1% of TEC)	42,310	
Total, contingencies (17.5% of TEC)	49,035	0
Total, line item costs (TEC)	280,200	9,675

5. Method of Performance

The CH2M HILL Hanford Group will manage the project for the Office of River protection. For Subproject 01, the onsite engineer-constructor will perform design and construction. Fixed-price contracts will be utilized to the maximum extent possible.

For Subproject 02, an offsite architect-engineer will perform design. The onsite engineer-constructor will perform construction with fixed-price contracts utilized to the maximum extent possible.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Subproject 01						
Project cost						
Facility cost						
Design	19,293	5,066	8,192	5,700	7,389	45,640
Construction	5,586	0	4,385	14,333	179,256	203,560
Total facility costs (Federal and Non-Federal)	24,879	5,066	12,577	20,033	186,645	249,200
Other project costs						
Conceptual design cost	1,595	0	0	0	0	1,595
NEPA documentation costs	10	0	0	0	0	10
Other project-related costs	6,545	843	2,109	1,663	21,735	32,895
Total other project costs	8,150	843	2,109	1,663	21,735	34,500
Total project costs (TPC)	33,029	5,909	14,686	21,696	208,380	283,700
Subproject 02						
Project cost						
Construction	0	0	0	0	280,200	280,200
Total facility costs (Federal and Non-Federal)	0	0	0	0	280,200	280,200
Other project costs						
Conceptual design cost	0	3,400	0	0	0	3,400
NEPA documentation costs	50	0	0	0	0	50
Other project-related costs	950	0	0	0	32,500	33,450
Total other project costs	1,000	3,400	0	0	32,500	36,900
Total project costs (TPC)	1,000	3,400	0	0	312,700	317,100

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

	Current Estimate	Previous Estimate
Subproject 01		
Annual facility operating costs (staff, utilities, etc.)	250	250
Annual facility maintenance and repair costs	50	50
Total related annual funding *(operating from FY 2005 through FY 2018)*	300	300
Subproject 02		

Annual facility operating costs (staff, utilities, etc.)	250	250
Annual facility maintenance and repair costs	50	50
Total related annual funding *(operating from FY 2005 through FY 2018)*	300	300

93-D-187, High-Level Waste Removal from Filled Waste Tanks, Savannah River, Aiken, South Carolina (SR-HL12)

(Changes from FY 2001 Congressional Notification are denoted with a vertical line [|] in the left margin.)

Significant Changes

The current schedule and funding profile have been realigned to reflect programmatic adjustments. The most significant programmatic realignment is the scheduled startup of Salt Processing in FY 2010 at which time a coupled waste stream (sludge and salt) will be fed to the Defense Waste Processing Facility. Also incorporated in the revised baseline are the costs associated with the equipment and infrastructure for nine tanks that were always part of the scope of this project.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1993 Budget Request *(Title I Baseline)*	2Q 1993	1Q 1994	3Q 1994	4Q 1999	86,500	88,640
FY 1994 Budget Request *(Title I Baseline)*	"	"	"	"	"	"
FY 1995 Budget Request *(Title I Baseline)*	1Q 1979	4Q 1999	2Q 1980	3Q 2005	602,700	991,446
FY 1996 Budget Request *(Title I Baseline)*	"	2Q 2006	"	4Q 2008	565,050	828,238
FY 1997 Budget Request *(Title I Baseline)*	"	"	"	"	"	"
FY 1998 Budget Request *(Current Baseline Estimate)*	"	4Q 2006	"	"	558,050	821,238
FY 1999 Budget Request *(Current Baseline Estimate)*	"	"	"	"	"	"
FY 2000 Budget Request *(Current Baseline Estimate)*	"	"	"	"	"	"
FY 2001 Budget Request *(Current Baseline Estimate)*	"	2Q 2028	"	4Q 2028	967,200	1,550,500
FY 2002 Budget Request (*Current Baseline Estimate*)	"	"	"	"	"	"

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1993	2,000 [a]	0	0
1994	186,802 [a]	188,802	184,117
1995	22,675 [a b]	22,675	25,233
1996	19,700	19,700	15,380
1997	13,000 [c]	13,000	18,200
1998	18,220 [d]	18,220	17,207
1999	15,774 [e]	15,774	17,080
2000	15,487 [f]	15,487	13,927
2001	24,674 [g]	24,674	25,432
2002	6,754	6,754	8,369
2003	25,388	25,388	24,130
Outyears	616,726	616,726	618,125

[a] This represents the operating expenses funded costs through FY 1994 of the three previously operating expense funded projects. Also, represents the actual operating expense funded costs though FY 1994. Previously reported operating expense costs of $192,420,000 were an estimate. The adjustment of $8,618,000 reflects the difference between the estimated value and actual value ($183,802,000). The original appropriation was $3,000,000.

[b] Use of current year ($1,700,000) funds for Productivity Savings and ($2,150,000) for FY 1995 rescission.

[c] Reflects use of prior year funds to meet uncosted offset to FY 1997 appropriation. Project total estimated cost is reduced as a result due to better than expected fixed-price contract costs.

[d] Reflects FY 1998 reprogramming of $700,00. The original appropriation was $17,520,000.

[e] Reflects FY 1999 internal reprogramming of $560,000. The original appropriation was $15,214,000.

[f] Reflects FY 2000 notification to allocate $6,500,000 of the $10,000,000 conference mark add-on for high-level waste removal activities. The original appropriation was $8,987,000.

[g] Reflects FY 2001 rescission of $59,000. Also a reduction for use of prior year balances of $2,479,000 is applied against this project. The original appropriation was $27,212,000.

3. Project Description, Justification and Scope

This project supports the high-level waste mission which is currently scheduled to complete in FY 2028. Waste removal work was started in the early 1980's using a cost-funded project approach. In FY 1994, three cost-funded projects were consolidated into this line item and the cost baseline was eventually established at $565,050,000 for total estimated cost and $828,238,000 for total project cost with a scheduled completion date in FY 2008. In FY 1994, the majority of the processing facilities in the high-level waste system were in either the construction or the startup phase. Planning and scheduling of the production phase was very preliminary and not optimized. The line item scope at that time provided the equipment and infrastructure required to remove waste from 38 of the 51 large underground storage tanks for transfer to the sludge or salt processing facilities for pretreatment prior to being vitrified at the Defense Waste Processing Facility. In previous submissions no costs were included for the isolation of these tanks from the rest of the tank farm in preparation for the interim and final closure process nor were any costs included for upgrades to the high-level waste system outside the tank farms.

In FY 1996, the Defense Waste Processing Facility began producing vitrified high-level waste canisters. The high-level waste mission extends until the FY 2028 timeframe and requires that waste be removed from the underground storage tanks in a prescribed sequence that supports the production schedule of the Defense Waste Processing Facility and regulatory commitments discussed below. The high-level waste system integration and planning has steadily improved and provides the capability to better plan and coordinate the capital construction requirements of the system. This line item is an integral part of the high-level waste system and is unique in that it spans more time than that normally associated with large capital construction projects. It is essentially a collection of smaller projects managed as one large effort due to the repetitive nature of the work and the need to closely coordinate project activities with tank farm and Defense Waste Processing Facility operations. The proposed change in the cost and schedule baselines will include equipment and infrastructure required to remove the high-level waste inventory from nine additional tanks bringing total included in this project to 47 of the 51 underground storage tanks. The installation of waste removal equipment on the four remaining tanks has been provided by other projects. The proposed change will also provide modifications to isolate the remaining 49 tanks from operating facilities in preparation for interim and final closure (two are closed).

Also included in this line item, are some high-level waste systems improvements for operability and efficiency of the system. Some of these improvements are for facilities outside the tank farms. The proposed cost baseline is increased to $967,200,000 for total estimated cost and $1,550,500,000 for total project cost with a scheduled completion date in FY 2028. This cost is composed of the following work items:

	TEC ($M)	OPC ($M)	TPC ($M)
Costed through FY 1999	$277.2	$37.4	$314.6
Sludge Tanks (To-Go)	$313.1	$271.9	$585.0
Salt Tanks (To-Go)	$312.0	$233.5	$545.5
Other High-Level Waste System (To Go)	$64.9	$40.5	$105.4

Total	$967.2	$583.3	$1,550.5

The project schedule has been extended to better match the production needs of the Defense Waste Processing Facility through a coupled waste feed (salt and sludge) and to accommodate the added scope. This extension increases the escalation component of the cost but reduces the amount of funding required in a given year and supports a more balanced high-level waste canister production program. A more detailed description of the scope in each of the work item categories includes:

Costed through FY 1999: Approximately $184,000,000 was expended during the timeframe when the waste removal work was done as cost-funded projects. These funds were used to complete the installation of waste removal equipment and infrastructure on 10 high-level waste tanks. In general, this includes slurry pumps, transfer pumps, transfer jets, structural support steel, service utilities and instrumentation. A number of other tanks were partially completed and some tank farm infrastructure work was done. In addition, two new control rooms were completed and one existing control room expanded. Another $131,000,000 has been spent since the consolidation of the cost projects into this line item. These funds were primarily spent on tank farm infrastructure, the construction of one new control room, the expansion of an existing control room and partial design and construction on Tanks 7, 8, 11, 21, 22 and 29.

Sludge Tanks: This portion of the line item scope supports the current high-level waste system production goals. Due to problems in establishing a viable salt pretreatment process, the Defense Waste Processing Facility will only process high-level waste sludge until sometime after FY 2008. During the FY 2000 to FY 2005 timeframe, the primary focus of this line item will be to provide waste removal equipment and infrastructure required to provide high-level waste sludge for Defense Waste Processing Facility batches 2 through 4. The total project cost expenditures during this period are estimated at approximately $245,000,000 and average approximately $41,000,000 per year. The remaining sludge processing cost will be spent after FY 2005 on Defense Waste Processing Facility batches 5 through 8.

Salt Tanks: Expenditures for this portion of the line item scope are not projected to start until FY 2006. The technical approach for the Salt Tanks is similar to that used for Sludge Tanks with a similar average cost per tank. Work on Salt Tanks is the last item to be completed on the line item.

Other High-Level Waste System: The scope of work includes various tank farm control room upgrades, miscellaneous tank farm piping/infrastructure upgrades and upgrades to facilities outside the tank farms. This category of work scope is intended to improve the efficiency and/or long-term operability of the high-level waste system. It is anticipated that additional scope items will be identified over the life of the high-level waste mission and that this line item may be used as a means to effect the capital improvements. Any future upgrades will be added by formal change control with proper notification and full disclosure.

The line item consists of two subprojects:

Subproject 01: Waste Removal

TEC	Previous	FY 2000	FY 2001	FY 2002	Outyears	Construction Start - Completion Dates
934,189	277,132	14,037	24,674	6,754	611,592	2nd Qtr. FY 1980 - 4th Qtr. FY 2028

In general, this subproject provides waste removal facilities including slurry pumps, transfer pumps, transfer jets, structural steel and associated instrumentation, and distributed control system. This subproject will provide equipment so that salt and/or sludge can be removed and transferred to either Salt Processing, when available, or Extended Sludge Processing for eventual feed to the Defense Waste Processing Facility. The waste removal process will be performed and funded separately by operating funds. Lastly, this subproject will provide the modifications to tank systems and services, as necessary, to isolate tanks from the operating facility at the end of the tank's service life and prior to tank closure.

Subproject 02: Processing Facility Upgrades

TEC	Previous	FY 2000	FY 2001	FY 2002	Outyears	Construction Start - Completion Dates
33,011	1,039	1,450	0	0	30,522	3rd Qtr. FY 1997 - 4th Qtr. FY 2005

The Processing Facility Upgrades subproject provides the processing upgrades to the Defense Waste Processing Facility, Saltstone, Effluent Treatment Facility or other waste tank farm facility required to support efficient processing of salt and sludge through the High-Level Waste System. These upgrades have not been fully defined; thus, the scope of this subproject will be modified in the future to include additional upgrades as necessary. The current scope includes upgrades to the Defense Waste Processing Facility and the service lines/infrastructure on the "East Hill" of the H-Area Waste Tank Farm. The current upgrades to the Defense Waste Processing Facility include upgrades to support processing of higher curie content sludge and a missile shield for the nitrogen system. The "East Hill" direct-buried service piping will be replaced with new above ground pipe on pipe racks.

The Federal Facilities Agreement requires that the site close the 22 remaining non-regulatory compliant waste tanks by FY 2022. These waste tanks do not have approved secondary containment. Some of these tanks have leaked; however, current waste levels have been reduced to below the leak sites. The Site Treatment Plan requires Defense Waste Processing Facility production to average at least 200 canisters per year. If funds are not appropriated for this project, the Savannah River Site will not meet the required Federal Facilities Agreement and Site Treatment Plan regulatory commitments; Defense Waste Processing Facility operations will be slowed or stopped; and waste tank space may not be available to support current and future missions.

The FY 2002 funds for this line item will be used: to complete Tank 7 waste removal facilities, to continue work on Tank 18 waste removal facilities, to complete Tank 19 isolation activities, to complete F/H Effluent Treatment Facility storage space. The pace of tank closure activities is being slowed down to accommodate other high priority activities.

Compliance with Project Management Order

- Critical Decision - 0: Original Completion Date - September 1990; Rebaselining was reaffirmed by ESAAB in April 2000
- Critical Decision - 1: Approved - June 1991
- Critical Decision - 2: Approved - March 1993
- Critical Decision - 3: Approved - October 1993

External Independent Reviews: February 2000, by Burns & Roe

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (18.8% of total estimated cost (TEC))	181,734	115,525
Design management costs	11,603	7,374
Project management costs	12,000	0
Total, engineering, design, inspection, and administration of construction costs (21.2% of TEC)	205,337	122,899
Construction phase		
Buildings & improvements to land	12,341	6,936
Specialized equipment	347,303	213,163
Other (major utilities/comp items, specialized facilities, etc.)	160,243	96,798
Removal cost less salvage	21,353	12,000
Inspection, design and project liaison, testing, checkout and acceptance	39,059	21,952
Construction management (2.3% of TEC)	22,119	19,636
Project management costs (5.0% of TEC)	48,000	0
Total, construction costs	650,418	370,485
Contingencies		
Design phase (2.9% of TEC)	27,960	16,108
Construction phase (8.6% of TEC)	83,485	48,558
Total, contingencies (11.5% of TEC)	111,445	64,666

[a] The cost estimate basis for this project is the rebaselining estimate.

The DOE escalation rates (percent per year) used for this estimate are as follows: FY 2000 2.3%; FY 2001 2.4%; FY 2002 2.5%; FY 2003 2.6%; Outyears 2.5%.

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, line item costs (TEC)	967,200	558,050

The project team has a high level of confidence in this estimate.

5. Method of Performance

Design will be performed by Bechtel Savannah River design engineering and a project engineering services contract or a fixed-price subcontract. Construction and procurement will be accomplished utilizing fixed-price subcontracts awarded on the basis of competitive bidding, where possible.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost						
Facility cost						
Design	93,342	1,772	5,337	2,701	130,145	233,297
Construction	183,875	12,155	20,095	5,668	512,110	733,903
Total facility costs (Federal and Non-Federal)	277,217	13,927	25,432	8,369	642,255	967,200
Other project costs						
Conceptual design cost	800	0	0	0	0	800
Other project-related costs [a]	38,312	8,600	6,592	3,246	525,750	582,500
Total other project costs	39,112	8,600	6,592	3,246	525,750	583,300
Total project costs (TPC)	316,329	22,527	32,024	11,615	1,168,005	1,550,500

7. Related Annual Funding Requirements

(FY 1998 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.) [b]	6,650	6,650
Annual facility maintenance and repair costs	2,850	2,850
Other annual costs	0	0
Total related annual funding *(operating from FY 1998 through FY 2010)*	9,500	9,500

[a] Includes $582,500,000 to fund permitting activities, Post Modification Testing Reviews, one-time program development startup, and management and integration contractor project support.

[b] Includes operating manpower, supplies and energy and additional operators. Operation of this facility will result in a net annual cost increase of $6,100,000 and 56 full time equivalents. This facility does not replace an existing facility.

02-EXP, Salt Processing Pilot Plant, Savannah River Site, South Carolina (SR-HL13)

Significant Changes

1) Relationship of the pilot scale demonstration unit (pilot plant) to the Salt Processing Project (SPP) – The pilot plant will be designed, built, and operated; and experience gained through operation of the pilot plant will be used in completing the SPP preliminary design. The pilot plant will contribute significantly to the establishment of the SPP baseline at the conclusion of preliminary design.
2) Pre-conceptual planning for the pilot scale demonstration unit is in progress. Equipment scale, throughput, and process flow sheets are being developed for three technologies. Additional refinement of cost and schedule for pilot scale test facility will be available following technology down selection. The following information is a rough order of magnitude based on best information and assumptions to date. Project risk evaluation has not been completed, therefore associated contingency has not been incorporated into the estimate. The bulk of the project work will be completed in FY 2003.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2002 Budget Request *(Preliminary Estimate)*	3Q 2001	2Q 2002	2Q 2002	1Q 2003	35,000	61,000

2. Financial Schedule (Operating Expense Funded)

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2001	3,000	3,000	3,000
2002	11,263	11,263	11,263
2003	20,737	20,737	20,737

3. Project Description, Justification and Scope

This project proposes the installation of a pilot plant to be used for technical demonstration and research and development of treatment processes for high-level waste (HLW). Research findings obtained from this pilot plant by the scale processing of actual high-level waste currently in storage at the Savannah River Site (SRS) would be used for the engineering, design, and process optimization for the Salt Processing Plant used to feed

salt waste to the Defense Waste Processing Facility (DWPF). This project would provide for the development and design of the treatment process, the design of associated building infrastructure systems, the design of process controls and instrumentation, interfaces with existing HLW systems, and the construction and installation of the salt processing equipment and controls. This project would provide for reconfiguration of the existing Late Wash Facility to accommodate the pilot plant equipment.

The Salt Processing Pilot Plant project would provide a treatment facility for the salt component of HLW prior to vitrification in the DWPF. The Savannah River Site (SRS) Site Treatment Plan and Federal Facilities Agreement (FFA) call for closing the HLW tanks and vitrification of the HLW in preparation for transport to the national high level waste repository. To make this program economically feasible, it is necessary to limit the volume of glass produced by separating the salt portion of the HLW into a high activity component for processing at DWPF and a low activity component for disposal at Saltstone.

The SRS currently stores 34 million gallons of HLW in interim storage tanks. The FFA requires removing the waste from the high-level waste tanks to resolve several safety and regulatory concerns. Some 'old style' tanks have leaked observable quantities of waste from primary to secondary containment. These 'old style' tanks do not meet Environmental Protection Agency secondary containment standards for storage of hazardous waste and must be removed from service. The waste must be removed and processed to meet this objective. Three million gallons of the liquid waste is sludge. The vitrification process for sludge is fully operational at DWPF. The remaining thirty one million gallons of the liquid waste is in the form of 'salt' (saltcake or salt solution called supernate) for which a new process/processing facility is needed.

A rigorous technology evaluation and research and development program has been conducted to support selection of a technology for pilot scale demonstration. Resources, personnel, and facilities from across the DOE complex, including the national laboratories, academic institutions and private industry, have been employed in this effort. Technical risks that could impact successful waste processing have been identified, evaluated, and mitigated within the constraints and limitations of laboratory scale testing with both simulated and actual HLW. Final confirmation of the conclusions from the lab scale tests can only be obtained by processing adequate quantity and variety of liquid radioactive HLW feeds. This can only be performed in a pilot scale facility located within the HLW system at the SRS. Initial pilot scale demonstrations will provide data required to perform final design of the facility. Timely design, construction, start-up, and operation of the pilot facility is imperative for success in meeting the schedule objectives of the project. Failure to meet these objectives will result in the inability of the HLW system to support site missions, continued operation of DWPF, and meeting FFA commitments for closure of non-compliant HLW storage tanks.

The pilot plant facilities for all of the processes under consideration would consist of modularized test beds to be installed in the existing biologically shielded cells in the Late Wash Facility to permit the use of actual high level waste from the high level waste tanks as part of the technology demonstration. The test modules will be of a remote-operated design for ease of maintenance, replacement, and later decommissioning.

The objectives of the pilot plant are to collect process data on: unit operations, process integration, process extreme conditions, upset conditions, process optimization, evaluate equipment, and support the design and engineering of the Salt Processing Pilot Plant project by providing a research and development test bed.

The Federal Facilities Agreement and Site Treatment Plan require SRS to average 200 HLW canisters per year. In order to continue this average, minimize total canister production and avoid future slowdowns or shutdowns of the Defense Waste Processing Facility, a constant level of feed (both sludge and salt) must be maintained. At this time, the alternative salt process facilities are on the critical path maintaining this constant feed.

The Salt Processing Pilot Plant project and full scale facility will comply with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

The pilot plant critical decisions are in the process of being delegated to the Savannah River Site Manager, and will be approved using an Energy Systems Acquisition Advisory Board (ESSAB)-like process. Critical decisions for the full scale facility remain the purview of DOE Headquarters, and will be approved by the ESAAB.

Compliance with Project Management Order

- Critical Decision - 0: Mission Need - June 2001.
- Critical Decision - 1: Preliminary Baseline Range - June 2001.
- Critical Decision - 2: Performance Baseline - January 2002.
- Critical Decision - 3: Start of Construction - January 2002.
- Critical Decision - 4: Start of Operations - October 2002.

All critical decisions for the pilot plant will be reviewed by the Savannah River Site Project Evaluation Board and the Executive Technical Management Board, and will be approved by the Site Manager.

4. Details of Cost Estimate.[a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (20.0% of total estimated cost (TEC))	7,000	NA
Design management costs	1,250	NA
Total, engineering, design, inspection, and administration of construction costs (23.6% of TEC)	8,250	NA
Construction phase		
Other (major utilities/comp items, specialized facilities, etc.)	18,750	NA
Removal costs less salvage	0	NA
Inspection, design and project liaison, testing, checkout and acceptance	1,000	NA
Construction management (5.0% of TEC)	1,750	NA
Total, construction costs	21,500	NA
Contingencies		
Design phase (3.0% of TEC)	1,050	NA
Construction phase (12.0% of TEC)	4,200	NA
Total, contingencies (15.0% of TEC)	5,250	NA
Total, line item costs (TEC)	35,000	NA

There is a low degree of confidence in this cost estimate because it has been developed based on inputs to the pre-conceptual design.

5. Method of Performance

Design and construction shall be performed by the management and integration contractor or subcontractor under the direction of the management and integration contractor.

[a] The cost estimate breakdown information will be available after completion of pre-conceptual design.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2000	FY 2001	FY 2002	Outyears	Total
Project cost						
Facility cost						
Design	0	0	3,000	5,000	1,300	9,300
Construction	0	0	0	6,263	19,437	25,700
Total facility costs (Federal and Non-Federal)	0	0	3,000	11,263	20,737	35,000
Other project costs						
R&D necessary to complete project.[a]	0	0	1,000	4,000	4,000	9,000
Conceptual design cost.[b]	0	0	1,000	11,263	4,737	17,000
NEPA documentation costs.[c]	0	0	0	0	0	0
Other project-related costs.[d]	0	0	0	0	0	0
Total other project costs	0	0	2,000	15,263	8,737	26,000
Total project costs (TPC)	0	0	5,000	26,526	29,474	61,000

7. Related Annual Funding Requirements

(FY 2002 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.).[e]	6,800	NA
Annual facility maintenance and repair costs	1,500	NA
Programmatic effort related to facility	0	NA
Other annual costs	200	NA

[a] This pilot plant would be used for research and development of the processing technology to be used in the production scale Salt Processing Pilot Plant project, which is separately funded.

[b] Conceptual Design to be performed during FY 2001.

[c] National Environmental Policy Act of 1969 documentation for the pilot and Salt Processing Facility is being performed as part of the salt process down selection process, with a Record of Decision expected in FY 2001.

[d] Includes all costs associated with the process development, training, procedures and facility support during construction of the project including Radcon protection.

[e] The operating life of this facility will be approximately 2 years during the conduct of preliminary and final engineering design of the Salt Processing Plant. Continuation of operation beyond FY 2005 to support operator training and waste processing will be evaluated by the project.

(FY 2002 dollars in thousands)

	Current Estimate	Previous Estimate
Total related annual funding *(operating from FY 2003 through FY 2005)*	8,500	NA