

Post 2006 Completion

Program Mission

The Post 2006 Completion account includes Environmental Management projects currently planned to require funding beyond FY 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 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 Nevada Test Site; and the Waste Isolation Pilot Plant in Carlsbad, New Mexico. A variety of multi-site activities are also funded in this account, including the deposit to the Uranium Enrichment Decontamination and Decommissioning Fund.

After completion of cleanup, it will be necessary for the Environmental Management 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 ground water 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 Department of Energy and other representatives of the Administration, Congress, Tribal Nations, representatives of regulatory agencies and state and local authorities, representatives of nongovernmental organizations, and interested members of the general public.

Program Goal

Accelerating cleanup and project completion is a central goal of the Environmental Management program. This goal is part of the strategies identified in the *Accelerating Cleanup: Paths To Closure* document, whereby all Environmental Management sites are working aggressively to reduce outyear costs by completing projects as soon and as efficiently as possible, thereby reducing life-cycle costs and schedules. For those sites in the Post 2006 Completion account, treatment will continue for the remaining "legacy" waste streams.

Program Objectives

- # Continue to address the most serious 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 Hanford, Washington and Savannah River, South Carolina; and ensuring the safe storage of spent nuclear fuel at Hanford, Idaho, and Savannah River.
- # Continue to be substantially in compliance with applicable environmental and other requirements and meet compliance milestones.
- # Begin shipments of transuranic waste from various sites around the complex to the Waste Isolation Pilot Plant in FY 1999 and continue shipping and disposal operations in FY 2000.

Performance Measures

Environmental Management has moved aggressively towards developing and implementing a performance-based budget that clearly demonstrates the program and project results expected for the resources requested. Building upon past experience, the FY 2000 budget was enhanced by aligning performance measures by project within the specific appropriation and program accounts. These performance measures can be found in the site details that follow.

Significant Accomplishments and Program Shifts

The FY 2000 budget request fully reflects the project-oriented structure that Environmental Management has developed as a key component of the effort to accelerate cleanup and reduce costs. All Environmental Management activities have been organized into projects which have a defined scope, schedule, cost, and end state. Through the strategies identified in the *Accelerating Cleanup: Paths to Closure* document, the Environmental Management sites are working to sequence projects and track progress, thereby reducing life-cycle costs and schedules. Specific accomplishments and program shifts may be found in the site details that follow.

Funding Profile

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Albuquerque Operations Office	132,215	75,943	105,784	29,841	39.3%
Carlsbad Area Office	173,700	185,404	186,404	1,000	0.5%
Idaho Operations Office	304,380	317,046	291,253	-25,793	-8.1%
Nevada Operations Office	68,918	80,081	85,307	5,226	6.5%
Oak Ridge Operations Office	224,825	176,756	264,561	87,805	49.7%
Richland Operations Office	647,198	665,992	687,397	21,405	3.2%
Savannah River Operations Office	710,155	733,031	824,864	91,833	12.5%
Multi-Site	102,315	76,268	67,978	-8,290	-10.9%
D&D Fund Deposit					
Headquarters	388,000	398,088	420,000	21,912	5.5%
Total, Post 2006 Completion, Defense	2,751,706	2,708,609	2,933,548	224,939	8.3%

Albuquerque

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Environmental Management, Post 2006 Completion program, carried out by the Albuquerque Operations Office is to support cleanup of some 2000 potential release sites at the Los Alamos National Laboratory in New Mexico and to provide for legacy waste management activities at the Los Alamos National Laboratory. In addition, the Los Alamos National Laboratory helps provide complex-wide solutions to issues associated with stabilization and storage of plutonium and other nuclear materials.

Program Goal

The Albuquerque Operations Office goal is to complete cleanup of all geographic sites under its cognizance in this account by FY 2006, except for the cleanup of the Los Alamos National Laboratory, which will be complete in FY 2015. Since the Los Alamos National Laboratory has a continuing Defense Programs mission, Environmental Management is planning for any required surveillance and maintenance and ground water monitoring activities to be budgeted for by the Department of Energy's Defense Programs, although this agreement has not been formally discussed with Defense Programs yet. The Los Alamos National Laboratory also manages programs which help reduce the potential for public exposure to nuclear materials through retrieval of excess plutonium-239 neutron sources and stabilization of at-risk excess nuclear materials. The Nuclear Materials Stewardship Project Office assists in the implementation of the Environmental Management Excess Materials Management Plan, which supports accelerated closure of Environmental Management sites and facilities.

Program Objectives

The program objective for the Los Alamos National Laboratory is to have all contaminated sites remediated and all legacy waste disposed of by FY 2015. The Los Alamos National Laboratory's goal is to complete the work-off of legacy mixed low-level waste (approximately 637 m³) by the end of FY 2004 and transuranic waste by the end of FY 2015. Treatment and disposal of all newly-generated mixed low-level waste and low-level waste as it is generated at the Albuquerque sites is funded by Defense Programs starting in FY 1999. A key initiative at the Los Alamos National Laboratory in FY 1999 will be to retrieve approximately 4,600 m³ of waste from earth-covered storage pads and place into inspectable storage configurations in accordance with a State of New Mexico compliance order. The FY 2000 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. In FY 2000, the environmental restoration program will close out 28 release sites, complete 14 assessments, and decommission two facilities. The development and design 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 Plutonium-Beryllium Neutron Source Recovery Program will attempt to accelerate recoveries and process the remaining backlog of plutonium-239 neutron sources. The Nuclear Material Stewardship Project Office will coordinate, consolidate, and integrate research and development and other activities to expedite the movement of nuclear materials regarding their packaging and shipping.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by site table; as well as at a project level, in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # 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 research mission and will maintain most of its 43 square miles of property but is considering transfer of 4,646 acres to the County/Pueblos for industrial, residential, or cultural use. The Los Alamos National Laboratory Environmental Restoration project is scheduled to be completed in FY 2008.
- # Received certification (Los Alamos National Laboratory) from the Carlsbad Area Office for transuranic characterization and transportation to the Waste Isolation Pilot Plant (FY 1998).
- # Continued monitoring activities and oversight of the New Mexico Agreements-in-Principle (FY 1998/FY 1999).

Environmental Restoration

- # Completed assessment activities for 71 potential release sites and closed out 24 potential release sites (FY 1998). Complete assessments for 34 potential release sites, and close out 18 potential release sites (FY 1999).
- # Completed work on 200 No Further Action proposals submitted in prior years (FY 1998).
- # Decontaminated and decommissioned four structures (FY 1998). Decontaminate and decommission one additional structure (FY 1999).
- # Completed two deep wells (FY 1998), and will install four alluvial aquifer wells and drill two additional deep wells (FY 1999).
- # Submitted to the regulators the Pajarito Canyon Work Plan, the Resource Conservation and Recovery Act Feasibility Investigation Report for the County Airport Landfill, and a Corrective Measures Study Plan for Technical Area 16, Outfall 260 (FY 1998). Complete and plan to submit in the summer of 1999 the Environmental Restoration Report to Congress in response to Public Law 105-119 (Land Transfer) (FY 1999).

Waste Management - Legacy Waste

- # Completed the Site Treatment Plan Annual Update Report and completed compliance monitoring (FY 1998).
- # Characterized and disposed of 135.5 m³ of mixed low-level waste (FY 1998) and 79 m³ more of legacy mixed low-level waste (FY 1999).
- # Retrieved legacy transuranic waste from Pad 1 and placed it into compliant storage (FY 1998), and will retrieve legacy transuranic waste from Pad 4 under earth cover and place into compliant storage (FY 1999).
- # Installed characterization gloveboxes in the RAMROD facility (FY 1998/FY 1999).
- # Upgrade the Los Alamos radioactive liquid wastewater treatment facility (FY 1998/FY 1999).
- # Prepared, certified, packaged, and made road-ready 17 shipments of the Los Alamos National Laboratory legacy transuranic waste for shipment to the Waste Isolation Pilot Plant (FY 1998). Continue to prepare and certify transuranic waste for shipment to the Waste Isolation Pilot Plant (FY 1999).
- # Treated and disposed of legacy mixed low-level waste according to the Site Treatment Plan (FY 1998/FY 1999).
- # Transfer the Los Alamos National Laboratory newly generated new waste program to the Defense Programs (FY 1999).

Nuclear Material Facility Stabilization

- # Continued the Research and Development program core technology component. Specific activities:
 - ▶ Completed many of the core technology projects needed to characterize materials science of stored materials.
 - ▶ Completed salt distillation technology for use at the Rocky Flats Environmental Technology Site.
 - ▶ Transferred pyrolysis technology to Hanford.
 - ▶ Began additional research and development activities identified by the Research and Development Committee in support of the Defense Nuclear Facilities Safety Board Recommendation 94-1 implementation (FY 1998).
- # Continued activities to stabilize at-risk excess nuclear materials and to accelerate site closures in support of the Defense Nuclear Facilities Safety Board Recommendation 94-1 (FY 1998).
- # Continued to analyze samples in support of shelf-life studies. The data is used in support of the exercise to develop a new plutonium storage standard (FY 1998).
- # Continued experiments on the thermal conditions inside shipping containers with materials in food pack/volrath cans (FY 1998).
- # Completed stabilization demonstrations for ash and graphite fines (FY 1998).

- # Transferred residue “washing” technology to the Rocky Flats Environmental Technology Site (FY 1998).
- # Began additional research and development activities as identified by the Research and Development Committee in support of the Defense Nuclear Facilities Safety Board Recommendation 94-1 implementation (FY 1998).
- # Deliver two polycube pyrolysis units to Hanford (FY 1999).
- # Continue shelf-life studies and surveillance (FY 1999).

Nuclear Criticality Predictability Program

- # Evaluated data generated by the Nuclear Criticality Predictability Program at the Los Alamos National Laboratory and processed data in support of the Defense Nuclear Facilities Safety Board Recommendation 97-2 (FY 1998).
- # Continued maintenance of production analytical software; continued training in the use of software systems; remediated code and nuclear data to reduce analytical uncertainties; validated new methods and technology; and provided technical support to DOE to plan and conduct its Nuclear Criticality Program (FY 1998/FY 1999).

Nuclear Materials Stewardship Project

- # Supported the EM Nuclear Materials Integration Project with expertise in materials forms, locations, and inventories (FY 1998). Contribute to Trade Studies of material disposition options under Nuclear Material Integration (FY 1999).
- # Prepared a complex-wide transportation plan for nuclear materials undergoing stabilization (FY 1998). Coordinate material transportation issues complex-wide for nuclear material undergoing stabilization and disposition (FY 1999).
- # Coordinated preparation of a new plutonium storage standard (FY 1998). Publish new plutonium storage standard to support stabilization and disposition activities (FY 1999).

Plutonium/Beryllium Sources

- # Removed over 1,100 plutonium-239-bearing neutron sources from the private and public sector since 1979. Approximately 300 such sources remain to be recovered (FY 1999).

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
AL004 / New Mexico Agreement in Principle . .	1,650	980	950	-30	-3.1%
AL008 / Nuclear Material Facility Stabilization R&D	14,100	12,920	12,900	-20	-0.2%
AL009 / LANL Environmental Restoration . . .	60,830	42,387	68,100	25,713	60.7%
AL012 / LANL Waste Mgmt - Newly Generated Waste	26,603	0	0	0	0.0%
AL013 / LANL Waste Management - Legacy Waste	27,333	17,126	21,000	3,874	22.6%
AL026 / Pu/Beryllium Sources	0	1,738	1,834	96	5.5%
AL027 / Nuclear Criticality	225	0	0	0	0.0%
AL028 / Nuclear Material Stewardship Project Office	1,474	792	1,000	208	26.3%
Total, Albuquerque	132,215	75,943	105,784	29,841	39.3%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Los Alamos National Laboratory	130,565	74,963	104,834	29,871	39.8%
Albuquerque Operations Office	1,650	980	950	-30	-3.1%
Total, Albuquerque	132,215	75,943	105,784	29,841	39.3%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Site			
Assessments	63.0	4.0	14.0
Cleanups	35.0	9.0	28.0
Facility Decommissioning			
Cleanups	5.0	1.0	2.0
Transuranic Waste			
Storage (m ³)	9,141.9	9,142.0	9,142.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	194.0	0.0	0.0
Mixed Low-Level Waste (MLLW)			
Storage (m ³)	380.7	381.0	302.0
Disposal - DOE On-site/Commercial (m ³)	135.5	79.0	53.0
Low-Level Waste (LLW)			
Disposal - DOE On-Site/Commercial (m ³)	1,314.0	0.0	0.0
Hazardous Waste			
Disposal - On-Site/Commercial (MT)	3,289.2	0.0	0.0

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 are transferred to the Office of Defense Programs in FY 1999. The Laboratory is comprised of over 2,000 release sites and about 130 facilities. Through FY 1998, remediation of 1,395 release sites and decommissioning of 41 facilities was completed. Completion of additional release sites and facilities are planned as follows: 9 release sites and one facility in FY 1999, and 28 release sites and two facilities in FY 2000. 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 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 1998	FY 1999	FY 2000
---------	---------	---------

The Los Alamos National Laboratory is managed through a performance-based management and operating contract to assure the most cost efficient service to the Government. The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the *Accelerating Cleanup: Paths to Closure*. Approximately 30 percent of the projects included in this section of the budget will have an independent cost review of the scope. The funds requested for FY 2000 are appropriate to perform the activities based on a historical level of effort cost.

AL004 / New Mexico Agreement in Principle

The New Mexico Agreement-in-Principle provides funding through a grant for the support of New Mexico's oversight and monitoring of the Department of Energy compliance with applicable environmental laws and regulations for the Los Alamos National Laboratory; Sandia National Laboratory, New Mexico; Lovelace Biomedical and Environmental Research Institute; and the Waste Isolation Pilot Plant. The New Mexico Environmental 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 Environmental Department in Santa Fe.

- # Funds provide for surface water, ground water, air and soil monitoring activities.
- # Preliminary review of environmental documents to expedite regulatory review process, which impacts cleanup schedules at the National Laboratories.
- # Technical support/advice to Los Alamos and Sandia Citizens Advisory Boards.
- # Technical support/advice to four Los Alamos Accord Pueblos.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Support/review of the Paths to Closure Plan and additional

Site-sponsored public outreach activities at all three facilities.

Increase public willingness to accept additional mission/scope at both National Laboratories.

.....	1,650	950
-------	-------	-----

Metrics project.

AL008 / Nuclear Material Facility Stabilization Research and Development

The Los Alamos National Laboratory is performing research and efforts to stabilize at-risk excess nuclear materials and to accelerate site

Department's response to the Defense Nuclear Facilities Safety Board Recommendation 94-1, which is the responsibility of the Office of Nuclear Material and Facility Stabilization. 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 Facility Stabilization continues to direct the stabilization technology development activities under this project in

Office in Albuquerque.

Supports process development implementation to expedite removal of plutonium inventory from Rocky Flats and to

reduce mortgage costs.

management programs for excess nuclear materials.

technology issues (e.g., corrosion, radiolysis, etc.) in order to reduce technology and safety and health risks.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Continue activities in support of the Defense Nuclear Facilities Safety Board Recommendation 94-1

Continue stabilization technology development, technology, and implementation support activities.

neutron scattering.

functions.

AL008	14,100	12,920
-------	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this</p>

AL009 / LANL Environmental Restoration

hazards posed by inactive and surplus DOE facilities and contaminated lands. The primary drivers for this project are the and Solid Waste Amendments to the Resource Conservation and potential release sites, including sites on private, county, Federal,

Complete assessment of 14 potential release sites. Submit 28 potential release sites for No Further Action.

Work Plan.

Technical Area (TA)-21, T TA-16, and T transfer activities will be partially funded, with one site assessment

AL009	42,387	68,100
-------------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Remedial Action			
Assessments	63.0	4.0	
Cleanups		9.0	28.0
Cleanup		1.0	2.0

Waste Mgmt - Newly Generated Waste

transferred to the Defense Programs in FY 1999.

AL012	26,603	0
-------	--------	---

Metrics			
Low-Level W			
Disposal - DOE On-site/Commercial (m ³)	1,314.0		0.0
Hazardous W			
Disposal - On-site/Commercial (MT)		0.0	0.0

Waste Management - Legacy Waste

all legacy transuranic 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

- # Complete the Site T performance compliance monitoring.
- #
- # Store, sort, segregate, and repackage transuranic waste to
- #
- # as non-mixed transuranic waste in FY 1998, which can be shipped when the W operation. No additional legacy transuranic waste will be fully certified.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

#

place into storage awaiting characterization.

AL013 27,333 17,126

Metrics		
T		
Storage (m ³	9,141.9	9,142.0
Disposal Ready for Shipment to DOE W ³⁾	194.0	0.0
Mixed Low-Level Waste ³⁾	380.7	381.0
Treatment (m)	135.5	79.0

AL026 / Pu/Beryllium Sources

management of nuclear materials, including the Plutonium-Beryllium Neutron Source Recovery Project. The Neutron

exposure to nuclear materials through the retrieval of excess plutonium neutron sources.

Accelerate recoveries and process the remaining backlog of Pu-239 neutron sources.

Develop implementation plan to integrate Plutonium/Beryllium capabilities with the Non-Defense

Department's responsibilities for neutron sources.

AL026 0 1,738

Metrics
No quantifiable corporate performance measures are associated with this

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

AL027 / Nuclear Criticality

This project funded a portion of the Department’s Nuclear Criticality Predictability Program to address implementation of the Defense Nuclear Facilities Safety Board Recommendation 97-2. The program was centralized under the Multi-Site Budget beginning in FY 1999.

Program activities described in the Multi-Site Budget.

AL027	225	0	0
-------------	-----	---	---

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

AL028 / Nuclear Material Stewardship Project Office

This project is designed to leverage field expertise in Nuclear Materials management in order to consolidate and expedite the movement of plutonium and other nuclear materials, thus allowing for accelerated shutdown of Environmental Management facilities.

- # Integrate and coordinate research and development activities supporting Nuclear Materials Stewardship.
- # Integrate research and development support to the Defense Nuclear Facilities Safety Board Recommendations 94-1 and 97-1, with needs identified by the Nuclear Material Integration Project.
- # Produce and maintain the stewardship Integrated Research and Development Plan, providing multi-year identification of research and development needs, integration and planning activities, priorities, resource requirements, and issues.
- # Integrate and coordinate nuclear material packaging and shipping activities.
- # Chair the cross-site, cross-program Nuclear Materials Packaging and Shipping Committee.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Produce and maintain the Stewardship Integrated transportation and Packaging Plan, providing multi-year identification of transportation and packaging needs, requirements, and issues.

benefits/tradeoffs of disposing of excess strontium and

Define and establish the National Isotope and Sealed Source office. The scope will be to integrate, coordinate, and facilitate the planning for management

excess nuclear sources, standards, and technical materials.

Flats through optimization of material management solutions.

storage issues.

AL028

1,474

792

Metrics

No quantifiable corporate performance measures are associated with this

Total, Albuquerque

132,215

75,943

Explanation of Funding Changes Fr

FY 2000 vs. (\$000)

AL004 / New Mexico Agr

No significant change. -30

AL008 / Nuclear Material Facility Stabilization Resear

No significant change. -20

AL009 / LANL Envir

Increased characterization and remedial actions to accomplish land transfer per new
 .L. 105-119, as well as increased work in other areas, such as drilling
 25,713

aste Management - Legacy Waste

Increase in transuranic waste volumes retrieved from under earthen cover and placed
 in above ground storage awaiting characterization. 3,874

AL026 / Pu/Beryllium Sour

Increase is for accelerated recovery and processing of sources to complete the
 radiation exposure to workers at the Los Alamos National Laboratory, and to
 ferences in overhead structures between the current Environmental
 Management program management and the previous Defense Programs management.

AL028 / Nuclear Material Stewardship Project Office

Change is due to increase in project responsibilities to support accelerated closure of
 EM sites and implementation of Nuclear Material Integration Project

Source Management Office. 208

T 29,841

Carlsbad

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Environmental Management, Post FY 2006 Completion program, carried out by the Carlsbad Area Office, is to protect human health and the environment by opening and operating the Waste Isolation Pilot Plant for safe disposal of transuranic waste and by establishing an effective system for management of transuranic waste from generation to disposal. 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. Originally, transuranic waste was buried as low-level waste in Department of Energy constructed landfills. Since 1970, however, transuranic waste has been placed in retrievable storage pending the completion and opening of a geologic disposal facility. The 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 and defined the total capacity of the Waste Isolation Pilot Plant to be 6,200,000 cubic feet (175,600 m³) of transuranic waste. Since October 1992, the Department has focused on activities directly related to the completion of the legislative prerequisites and to the demonstration of compliance with long-term disposal regulations and Resource Conservation and Recovery Act regulations in order to reach a disposal decision. In September 1996, Congress amended the Waste Isolation Pilot Plant Land Withdrawal Act to delete duplication in regulatory compliance and to streamline provisions of the Act. The Act, as amended, also authorizes the Department to annually provide \$20,000,000 plus an annual Consumer Price Index increase, for 14 years starting in FY 1998, to the State of New Mexico for economic impact assistance.

Program Goal

The primary goal of the program is to meet all regulatory and technical requirements to begin disposal operations in the Waste Isolation Pilot Plant at the earliest opportunity. The Waste Isolation Pilot Plant startup is a key element in the Environmental Management strategy for disposal of transuranic waste under the Department of Energy control. Many of the Federal Facility Compliance Act consent orders and agreements between the States, agencies, and the transuranic waste sites are based on the assumption that the facility will receive transuranic waste in the immediate future. The Department remains committed to meeting all the near-term transuranic waste compliance agreements included in the various States Agreements. The transportation and disposal system capacity is scheduled to be available to meet the requirements of the compliance agreements; however, characterization and waste loading process adjustments will be required by the transuranic waste sites to meet recent requirements imposed by the State of New Mexico. Site processes are starting to reflect these procedural changes. In particular, the Idaho National Engineering and Environmental Laboratory is working to ensure that the 3,100 m³ of transuranic waste will be disposed at the Waste Isolation Pilot Plant by December 31, 2002. By FY 2006, the Waste Isolation Pilot Plant expects to have disposed of approximately 40,000 m³ of contact-handled transuranic waste and approximately 1,700 m³ of remote-handled transuranic waste. Current planning has all transuranic waste at the Nevada Test Site, the Mound Plant, and selected small quantity sites disposed by FY 2006. The total volumes disposed by FY 2006 represent 40 percent of the current inventory of 109,000 m³ of transuranic waste now stored at the sites, and 24 percent of the total capacity of 175,600 m³. During the planned 35-year disposal phase, waste will be received from 10 major sites and 13 small quantity sites. The disposal phase is followed by a five-year decommissioning and dismantlement phase.

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. Life-cycle costs in FY 1998 dollars for the period FY 1997-2006 are \$1,825,300,000 and post FY 2006 costs are expected to be \$5,897,548,000. 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. The Privatization Appropriation for FY 1998 included \$21,000,000 for capital equipment for shipping containers such as the Transuranic Waste Package Transporter II necessary to fully implement the contact-handled transuranic waste transportation system. The Privatization Appropriation for FY 1999 included \$19,605,000 to develop and fabricate the 72B cask, which will be used to transport remote-handled transuranic waste by the selected privatized contractor. These two privatization projects are expected to save more than \$290,000,000 in the Waste Isolation Pilot Plant funding requirements over the next 35 years.

Program Objectives

The Environmental Management Program expects the Waste Isolation Pilot Plant to meet transuranic waste disposal goals by ramping up to a receipt rate of 14 contact-handled transuranic waste shipments per week by the end of FY 2000 and 17 shipments per week by December 31, 2000. The expected transuranic waste shipment capacity will increase from about 165 in FY 1999 to about 422 in FY 2000. The expected transuranic waste disposal capability will increase from about 1,320 m³ in FY 1999 to about 3,376 m³ in FY 2000. The facility is also relying on privatization of contact-handled and remote-handled transuranic waste transportation services to reduce costs. There are no additional major projects planned for the Waste Isolation Pilot Plant Site. Future construction needs will be covered under the general plant project funding.

The Carlsbad Area 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 Area Office funds a wide variety of institutional programs that provide economic impact assistance and operational oversight. Institutional support provides additional funding for other activities such as the Environmental Evaluation Group, Carlsbad Environmental Monitoring and Research Center, Western Governors' Association, Southern States Energy Board, cooperative agreements with Indian Tribes, New Mexico Emergency Response, New Mexico Impact Assistance, and other activities. Funding for these activities totals \$31,700,000 in FY 2000. Prior year funding was \$35,200,000 in FY 1999, and \$31,100,000 in FY 1998.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by site table; as well as at a project level, in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Issued the Waste Isolation Pilot Plant Supplemental Environmental Impact Statement Record of Decision for disposal operations on January 16, 1998 (FY 1998).
- # Declared the Waste Isolation Pilot Plant Operational Readiness on March 26, 1998 (FY 1998).
- # Received Environmental Protection Agency Certification of the Waste Isolation Pilot Plant compliance with disposal regulations on May 13, 1998 (FY 1998).
- # Notified Congress on May 13, 1998, of intent to operate the Waste Isolation Pilot Plant as a disposal facility (FY 1998).
- # Received the draft Waste Isolation Pilot Plant Resource Conservation and Recovery Act Part B permit from the New Mexico Environment Department on May 15, 1998 (FY 1998).
- # Received notification from the Defense Nuclear Facilities Safety Board that the Waste Isolation Pilot Plant can be operated safely on June 3, 1998 (FY 1998).
- # Provided \$20,000,000 to the State of New Mexico for impact assistance (FY 1998).

- # Received the State of New Mexico letter of determination that the Los Alamos National Laboratory waste proposed for initial shipment to the Waste Isolation Pilot Plant is not subject to the Resource Conservation and Recovery Act in December 1998 (FY 1999).
- # Obtain the Environmental Protection Agency approval of the Rocky Flats Environmental Technology Site and the Idaho National Engineering and Environmental Laboratory Quality Assurance and Waste Characterization Programs (FY 1999).
- # Award Contact-Handled Transuranic Waste Transportation Services privatization contract (FY 1999).
- # Receive favorable litigation decisions and initiate transuranic waste shipments to the Waste Isolation Pilot Plant (FY 1999).
- # Begin to receive waste from the transuranic waste generator sites at an initial rate of one shipment per week increasing to five shipments per week by the end of FY 1999 (FY 1999).
- # Receive the Waste Isolation Pilot Plant Resource Conservation and Recovery Act Part B final permit from the State of New Mexico (FY 1999).
- # Award Remote-Handled Transuranic Waste Transportation Services privatization contract (FY 1999 or early FY 2000).
- # Provide \$20,300,000 to the State of New Mexico for impact assistance (FY 1999).

Program Shifts

- # The June 1998 “Accelerating Cleanup: Paths to Closure” included schedules and performance metrics based upon opening the Waste Isolation Pilot Plant in late May or June of FY 1998. These assumptions were based on the need to meet current transuranic waste sites’ compliance agreements wherever possible.
- # The Department of Energy anticipates that the State of New Mexico will issue to the Waste Isolation Pilot Plant a final Resource Conservation and Recovery Act Part B Permit for disposal of hazardous (mixed) transuranic waste during FY 1999. At the current time, the Department of Energy is only eligible to dispose of non-mixed transuranic waste at the Waste Isolation Pilot Plant until a Resource Conservation and Recovery Act permit is granted.
- # On May 13, 1998, the Environmental Protection Agency issued a final rulemaking that certified that the Waste Isolation Pilot Plant complies with the Agency’s radioactive waste disposal regulations. Following Environmental Protection Agency’s certification of the Waste Isolation Pilot Plant, the Department of Energy informed Congress of the Department’s intent to begin disposal operations at the facility since all the Waste Isolation Pilot Plant Land Withdrawal Act disposal prerequisites had been completed. The start of disposal operations at the Waste Isolation Pilot Plant has been delayed pending the resolution of a 1992 Permanent Injunction for shipping waste to the Waste Isolation Pilot Plant for the now canceled test phase. Also, on July 17, 1998, three lawsuits were filed against the Environmental Protection Agency over its decision to certify the Waste Isolation Pilot Plant for radioactive waste disposal operations.

Within these constraints, the Department remains committed to doing all it can to meet its obligations to the various States for the cleanup of its sites. Disposal operations are expected to begin in FY 1999, provided that all legal constraints have been resolved.

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
CAO-1 / WIPP Base Operations	101,979	106,621	111,698	5,077	4.8%
CAO-2 / WIPP Disposal Phase Certification and Experimental Program	39,862	37,387	35,295	-2,092	-5.6%
CAO-3 / WIPP Transportation	9,186	17,494	19,222	1,728	9.9%
CAO-4 / WIPP TRU Waste Sites Integration and Preparation	22,673	23,902	20,189	-3,713	-15.5%
Total, Carlsbad	173,700	185,404	186,404	1,000	0.5%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Waste Isolation Pilot Plant	173,700	185,404	186,404	1,000	0.5%
Total, Carlsbad	173,700	185,404	186,404	1,000	0.5%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Transuranic Waste			
Inventory - Interim Storage (m ³)			
Disposal Capability - DOE On-Site (m ³)	0.0	1,320.0	3,376.0

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 May 13, 1998, the Environmental Protection Agency certified that the Waste Isolation Pilot Plant complies with the radioactive waste disposal standards, and the Department of Energy notified Congress that the Waste Isolation Pilot Plant was ready to begin disposal operations. However, only non-mixed transuranic waste will be disposed until the State of New Mexico has issued a Resource Conservation and Recovery Act Part B Permit.

Detailed Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The managing and operating contractor, Westinghouse Waste Isolation Division, accounts for approximately 50 percent of the Carlsbad Area Office funding requirements. Westinghouse operates the Waste Isolation Pilot Plant through a contract that is nearly 90 percent Fixed Price. 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 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the *Accelerating Cleanup: Paths to Closure*. All of the projects included in this section of the budget have had an independent review through the Carlsbad Area Office's program planning process. There are no projects covered by the Office of Management and Budget A-11, Part B, in this section of the budget.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

CAO-1 / WIPP Base Operations

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. Also included is the legislative commitment to pay Impact Assistance to the State of New Mexico (\$20,900,000) in FY 2000.

Continue receiving waste from the transuranic waste generator sites.

Transuranic waste shipment capability will increase from about 165 in FY 1999 (1,320 m³) to about 422 in FY 2000 (3,376 m³.)

CAO-1	101,979	106,621	111,698
-------------	---------	---------	---------

Metrics			
Transuranic Waste			
TRU Inventory - Interim Storage (m ³)			
Disposal Capability - DOE On-Site (m ³)	0.0	1,320.0	3,376.0

CAO-2 / WIPP Disposal Phase Certification and Experimental Program

This project includes experimental and performance assessment work in support of the recertification and operational performance improvements for the Waste Isolation Pilot Plant site and the national transuranic waste system; and establishing a focused international nuclear waste disposal research and development program.

Continue to develop and maintain an up-to-date performance assessment capability to support the Waste Isolation Pilot Plant recertification in FY 2003.

Conduct monitoring, confirmatory testing, and experimental activities to support the Waste Isolation Pilot Plant recertification in FY 2003.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Continue Actinide Source Term tests at the Los Alamos National Laboratory and Gas Generation tests at Argonne National Laboratory-West/Idaho National Engineering and Environmental Laboratory in support of the Environmental Protection Agency Recertification.

CAO-2 39,862 37,387 35,295

<p>Metrics No quantifiable corporate performance measures are associated with this project.</p>

CAO-3 / WIPP Transportation

This project includes all activities related to transportation, such as Emergency Response training, establishing and opening transportation corridors; all 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, the Southern States Energy Board and Native American Tribes.

Provide transportation services for the shipment to the Waste Isolation Pilot Plant for contact-handled transuranic waste from the waste generator sites.

CAO-3 9,186 17,494 19,222

<p>Metrics No quantifiable corporate performance measures are associated with this project.</p>

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

CAO-4 / WIPP Transuranic Waste Sites Integration and Preparation

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 certification-like activities performed by the Carlsbad Area Office. This project also includes the Secretary of Energy commitments to outside stakeholders such as: the Carlsbad Environmental Monitoring and Research Center, the Technical Training Center, as well as oversight commitments to the National Academy of Sciences and the Environmental Evaluation Group. Also included are infrastructure support costs such as the Interagency Agreement with the Bureau of Land Management.

- # Continue quality assurance and waste certification audit activities to certify transuranic waste shipments to the Waste Isolation Pilot Plant.
- # Continue remote-handled integration activities to ensure receipt of remote-handled waste in FY 2002.

CAO-4	22,673	23,902	20,189
-------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

Total, Carlsbad Area Office	<u>173,700</u>	<u>185,404</u>	<u>186,404</u>
-----------------------------	----------------	----------------	----------------

Explanation of Funding Changes From FY 1999 to FY 2000

FY 2000
vs.
FY 1999
(\$000)

CAO-1 / WIPP Base Operations

Increase contact-handled transuranic waste receiving capabilities at the Waste Isolation Pilot Plant from 1,320 m³ in FY 1999 to 3,376 m³ in FY 2000; and full panel mining operations, and inflationary increase of \$600,000 over the FY 1999 payment to the State for Economic Impact Assistance. 5,077

CAO-2 / WIPP Disposal Phase Certification and Experimental Program

Decrease occurs as the program decides not to accelerate the completion of simulation model upgrades in support of first recertification, and also reflects reduced experimental program activities. -2,092

CAO-3 / WIPP Transportation

Increase transportation rates from five shipments per week to 14 shipments per week by the end of FY 2000 and 17 shipments per week by December 31, 2000. 1,728

CAO-4 / WIPP Transuranic Waste Sites Integration and Preparation

Decrease reflects completion of most of the reports mandated by the Waste Isolation Pilot Plant Land Withdrawal Act and efficiencies attained from a full year of operational status. -3,713

Total Funding Change, Carlsbad 1,000

Idaho

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Post 2006 Completion, Environmental Management 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 full compliance with applicable 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 2060. 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 disposal can be accomplished. 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. The budget request assumes both productivity improvements and projected efficiencies.

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 dry storage of spent nuclear fuel produced for the Idaho National Engineering and Environmental Laboratory reactors, foreign and domestic research reactors, and other DOE site reactors, and in addition, manage spent nuclear 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 generated by waste treatment and decontamination activities at the Idaho Nuclear Technology and Engineering Center. All of the legacy high-level waste has been pretreated and converted to a calcine, with only sodium-bearing liquid waste remaining in the tank farm from decontamination and waste treatment activities. The high-level waste project objective is to continue calcining liquid waste through the first half of FY 1999, and then place the calciner in standby, pending a 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 the Settlement Agreement (October 17, 1995) with the State of Idaho:

- # The high-level waste activities will treat sodium-bearing waste by 2012.
- # The Department of Energy will empty the 11 High-Level Waste Tanks by 2012. Under a Consent Order modification signed in FY 1998, the Department of Energy will empty the five pillar and panel tanks by FY 2003 and accelerate their closure several years earlier than 2012.
- # Submit a closure plan for at least one tank by December 2000.
- # By 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.
- # The Department of Energy will begin negotiations with the State in December 1999 on final plan and schedule for treatment of high-level waste, following the development of the Idaho National Engineering and Environmental Laboratory High-Level Waste and Facility Disposition Environmental Impact Statement.
- # Decision on future calciner operations by June 2000.
- # The Department of Energy will begin operating a new privatized dry spent nuclear fuel storage facility by July 1, 2003, and complete the transfer of all spent fuel from wet storage facilities to dry interim storage by December 31, 2023.
- # The Department of Energy will remove all spent fuel from Idaho by January 1, 2035.
- # The Advanced Mixed Waste Treatment Project will meet the Idaho Settlement Agreement through awarding the Advanced Mixed Waste Treatment Project contract (actual award December 1996); 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 m³ of transuranic waste out of the State of Idaho each year after January 1, 2003; and completing the shipment of 65,000 m³ 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 40 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 m³ 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 in the Advanced Mixed Waste Treatment Project facility, at other Department of Energy facilities, or at commercial treatment facilities.

- # All Records of Decision for environmental restoration work at the Idaho National Engineering and Environmental Laboratory should be negotiated by FY 2003.
- # 100 percent of environmental restoration assessments, and 90 percent of release sites will be completed.
- # Two High-Level Liquid Waste Tanks will be closed.

A major objective of the Environmental Management Program at the Idaho National Engineering and Environmental Laboratory is to use technology development to ensure completion of the primary goals. These technologies will accelerate cleanup schedules and reduce costs. Innovative technologies continue to be developed to meet the Idaho National Engineering and Environmental Laboratory needs and will be demonstrated and implemented as necessary to meet schedules and budgets. Examples of these technologies include:

- # Process studies to increase the sodium bearing radioactive waste throughput at the calciner facility.
- # Demonstrations of solvent extraction processes to remove transuranic waste and strontium components from sodium bearing wastes.
- # Development of pilot scale vitrification methods, including development work on cross flow filtration system to remove particulates from the waste stream.
- # Demonstration of advanced transuranic waste characterization systems needed to improve throughput and increase efficiency.
- # Use of the light duty utility arm to characterize tank heels.
- # Deployment of the Rapid Geophysical Surveyor for ultra-high resolution geophysical mapping and adaptation of the dig face characterization instrumentation with the Global Positioning Radiometric Scanner System for broad area radiation mapping.
- # Remote Excavator for removal of unexploded ordnance.
- # Demonstration of in situ bioremediation of organic contaminants at an injection well.
- # Stabilization of the Waste Experimental Reduction Facility fly ash and other low activity waste.
- # Passive Vapor Vacuum Extraction for removal of below surface organic vapors.
- # Robotics and advanced systems for waste handling and deactivation and decommissioning.
- # Decommissioning of highly contaminated fuel pools and associated structures using innovative technologies.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by Site table; as well as at a project level in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Initiated remedial activities associated with the comprehensive Record of Decision for the Test Reactor Area (FY 1998), and complete remedial actions and initiate operations and maintenance activities at Operable Unit 2-13 (FY 1999) Waste Area Group 2.
- # Completed two Facility Assessments and four Facility/Structure Decontamination and Decommissionings completions (FY 1998); complete five Facility Assessment and eight Facility/Structure Decontamination and Decommissioning completions (FY 1999).
- # Continued the Vacuum Vapor Extraction Remedial Action and ground water and Pad A monitoring (FY 1998, Waste Area Group 7).
- # Developed plan for Stage 1 subsurface exploration of Pit 9 to obtain materials for bench-scale treatability studies for Transuranic Pits and Trenches Projects (FY 1998 Waste Area Group 7); conduct bench-scale treatability studies on waste materials from Pit 9 and characterization concerning waste form and contaminate migration for Transuranic Pits and Trenches (Operable unit - 7-13/14) (FY 1999).
- # Developed Work Plan Addendum for Operable Units 7 13/14 (FY 1998 Waste Area Group 7).
- # Continued Meteorologic Monitoring, Seismic Monitoring, Emergency Preparedness, Environmental Monitoring, Experimental Breeder Reactor-1, Architect/Engineer and Cost Estimating Standards, and Integrated Facility Planning Activities (FY 1998/FY 1999).
- # Completed a limited portion of backlog of maintenance and repair safety and health correction items (FY 1998/FY 1999).
- # Completed safety and health corrective action plan for July 1998, Idaho National Engineering and Environmental Laboratory Worker Facility (FY 1999).
- # Completed calcining of high-level waste in FY 1998, several months earlier than the Settlement Agreement milestone.
- # 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 1998 and first half of FY 1999.
- # Received foreign research reactor fuel shipments safely and without incident (FY 1998).
- # Carry out Idaho Nuclear Technology and Engineering Center (formerly Idaho Chemical Processing Plant) infrastructure operations (e.g., provide steam for 130 buildings, 147,000 kilowatt hours per bay of power, and 2,500,000 gallons of water) (FY 1998/FY 1999).

- # Transferred 225 units of spent nuclear fuel out of wet storage at the Chemical Processing Plant-603 into more modern storage at the Chemical Processing Plant-666 (FY 1998).
- # Completed peer review of plutonium research and development priorities to accomplish plutonium stabilization (FY 1998).
- # Complete the Draft Comprehensive Record of Decision for Idaho Nuclear Engineering Technology Center (Waste Area Group 3) in March 1999; for Test Area North (Waste Area Group 1) in April 1999; for Central Facilities Area (Waste Area Group 4) in July 1999; and for the Power Burst Facility (Waste Area Group 5) in August 1999.
- # Complete final Record of Decision for Waste Area Group 3, (July FY 1999).
- # Develop plans for Stage 2 limited retrieval/excavation in selected areas of Pit 9 and pilot-scale treatability studies and tests (FY 1999).
- # Complete construction on all approved FY 1998 and prior general plant project facility upgrades (FY 1999).
- # Complete conceptual design for the proposed FY 2001 Sitewide Idaho National Engineering and Environmental Laboratory Information Network (FY 1999).
- # Issue a Record of Decision for shipment and ultimate disposal of spent nuclear fuel outside of Idaho (FY 1999).
- # Begin transferring fuel from wet storage in the Test Area North-607, Nuclear Hot Shop, pool to the interim dry storage facility (FY 1999).
- # Continue transfer of spent nuclear fuel from wet storage at the Chemical Processing Plant-603 to wet storage at the Chemical Processing Plant-666 and dry storage at the Interim Fuel Storage Facility (FY 1999).
- # Complete prototype system for non-destructive assay of spent nuclear fuel by September 1, 1999, (FY 1999).
- # Transfer the Plutonium Focus Area to the Office of Science and Technology (FY 1999).
- # Complete Phase I of the Advanced Mixed Waste Treatment Project, including the National Environmental Policy Act evaluation; the Department of Energy Environment, Safety, and Health Authorization; environmental regulatory permitting; and associated design in support of an Idaho Settlement Agreement milestone to complete construction of a mixed waste treatment facility by December 31, 2002, (FY 1999).
- # Prepared Federal Facilities Compliance Act Annual Mixed Waste Report to Congress (FY 1998).
- # Completed comparisons of Waste Acceptance Criteria for six waste management disposal sites for potential integration opportunities (FY 1998).
- # Prepare Integrated Burn Plan for the Department Incinerator System Team (FY 1999).
- # Complex-Wide Waste Acceptance Audit Team will begin audits of generators sending waste to the DOE disposal sites (FY 1999).

- # Commercial Treatment and Disposal Site Audit Team will audit commercial sites used by the DOE with the results being accepted by all DOE generating sites rather than each DOE site sending its own team (FY 1999).
- # Implementation and oversight of the standardized mixed low-level waste characterization program (FY 1999).
- # Carry out activities in order to meet the Idaho Settlement Agreement, Federal Facility Compliance Agreement, Federal Facility Agreement/Consent Order, and other regulatory requirements in a safe and environmentally acceptable manner (FY 2000).
- # Obtain a Record of Decision for High-Level Waste and Facilities Disposition Environmental Impact Statement, submit Tank Closure Plan for one tank, and negotiate with State for plan and schedule for treatment of calcined high-level waste (FY 2000).
- # Commence negotiations with the State of Idaho to develop a mutually agreeable schedule to place Spent Nuclear Fuel into dry interim storage in support of Settlement Agreement, and continue moving TMI-2 fuel from wet to dry interim storage per Settlement Agreement milestone to complete by June 1, 2001 (FY 2000).
- # Continue to reduce risk of Spent Nuclear Fuel placed in vulnerable storage by conducting activities such as the transfer of Spent Nuclear Fuel from first generation to second generation dry storage wells at CPP-749 and complete transfer of Spent Nuclear Fuel in CPP-603 aged wet storage to improved storage locations (FY 2000).
- # Comply with Federal Facilities Agreement/Consent Order schedules and milestones for the assessment and cleanup of Test Area North, Test Reactor Area, Idaho Nuclear Technology Engineering Center, Central Facilities Area, Power Burst Facility, Radioactive Waste Management Complex, Pit 9 Remediation, and for site-wide monitoring (FY 2000).

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
HQNP-SI01-1D / Security Investigations	0	508	508	0	0.0%
ID-CTREXC-101 / Low-Level Waste/Mixed Low-Level Waste Center of Excellence	498	395	0	-395	-100.0%
ID-ER-102 / Test Reactor Area Remediation . .	1,647	2,893	1,660	-1,233	-42.6%
ID-ER-103 / Idaho Nuclear Technology and Engineering Center (formerly Idaho Chemical Processing Plant) Remediation	2,995	11,404	13,815	2,411	21.1%
ID-ER-106 / Radioactive Waste Management Complex Remediation	39,053	23,700	7,013	-16,687	-70.4%
ID-ER-107 / Pit 9 Remediation	0	2,941	2,379	-562	-19.1%
ID-ER-108 / Site-wide Monitoring Area Remediation	3,386	3,529	6,144	2,615	74.1%
ID-ER-109 / Remediation Operations	14,955	19,872	14,984	-4,888	-24.6%
ID-ER-110 / Decontamination and Decommissioning	7,374	5,339	7,866	2,527	47.3%
ID-HLW-101 / High-Level Waste Pretreatment	40,038	38,546	38,751	205	0.5%
ID-HLW-103 / High-Level Waste Treatment and Storage	18,312	13,053	24,674	11,621	89.0%
ID-HLW-105 / Low Activity Waste Treatment . .	0	2,108	5,712	3,604	171.0%
ID-LRP-101 / Environmental Engineering and Science Center	8,000	61	0	-61	-100.0%
ID-OIM-101 / Site-wide Landlord Operations . .	23,076	29,604	34,626	5,022	17.0%
ID-OIM-102 / Idaho Nuclear Technology and Engineering Center (formerly Idaho Chemical Processing Plant) Non-Process Plant Operations	51,240	60,165	51,283	-8,882	-14.8%
ID-OIM-116 / Environmental Legacy Compliance (VCO)	0	0	9,077	9,077	>999.9%
ID-SNF-101 / National Spent Nuclear Fuel Program	21,952	26,092	14,275	-11,817	-45.3%
ID-SNF-102 / Integrated Spent Nuclear Fuel Program	20,683	9,159	7,689	-1,470	-16.1%
ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities	29,524	37,920	30,601	-7,319	-19.3%
ID-WM-105 / AMWTP Production Operations	3,212	8,610	527	-8,083	-93.9%
ID-WM-106 / Idaho National Engineering and Environmental Laboratory Site-wide Environmental Protection	5,176	6,988	7,508	520	7.4%
ID-WM-108 / Integrated Waste Operations Program	13,259	14,159	12,161	-1,998	-14.1%
Total, Idaho	304,380	317,046	291,253	-25,793	-8.1%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Idaho National Engineering and Environmental Laboratory	304,380	317,046	291,253*	-25,793	-8.1%
Total, Idaho	304,380	317,046	291,253	-25,793	-8.1%

*The total program activity funding in FY 2000 totals \$334,253,000. Due to the termination of the Pit 9 subcontract, \$43,000,000 will be made available in uncosted carryover to provide for the phased alternate approach.

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Sites			
Assessments	15.0	38.0	0.0
Cleanups	7.0	11.0	6.0
Facility Decommissioning			
Assessments	2.0	5.0	15.0
Cleanups	4.0	8.0	11.0
High-Level Waste			
Treatment (m ³)	760.0	732.0	1,041.0
Storage (m ³)	9,367.0	9,062.0	8,085.0
Disposal	0.0	0.0	0.0
Spent Nuclear Fuel			
Stabilized (MTHM)51	6.0	53.1

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 570 m³ of spent nuclear fuel from a number of sources, including the Navy, foreign and domestic research reactors, and some commercial reactors with the Department of Energy owned fuel. Environmental remediation activities are required at ten Waste Area Groups encompassing 50 different operable units, which are comprised of 508 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 (ground, 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 1998	FY 1999	FY 2000
---------	---------	---------

The Idaho National Engineering and Environmental Laboratory is managed through an incentivized integrated contract, with fixed-price subcontracts, to assure the most cost efficient service to the Government. The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the “Accelerating Cleanup: Paths to Closure.” 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. Army Corps of Engineers performed an independent review of the Environmental Management baseline at the Idaho National Engineering and Environmental Laboratory.

HQNP-SI01-LT-ID / Security Investigations

Funding will be used to perform new security investigations and re-investigations for non-Federal employees in accordance with DOE Order requirements for the Idaho site.

HQNP-SI01-LT-ID	0	508	508
-----------------------	---	-----	-----

Metrics No quantifiable corporate performance measures are associated with this project.

ID-CTREXC-101 / Low-Level Waste/Mixed Low-Level Waste Center of Excellence

The Low-Level Waste/Mixed Low-Level Waste Center of Excellence (the Center) will analyze critical waste management issues, formulate effective solutions with respect to those issues, and assist the Department of Energy Headquarters in establishing policies, which are put into practice by the Department of Energy low-level waste and mixed low-level waste programs nationwide.

Activities are being curtailed in FY 2000, due to overall budget constraints and other higher priority efforts.

ID-CTREXC-101	498	395	0
---------------------	-----	-----	---

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

ID-ER-102 / Test Reactor Area Remediation (WAG 2)

This project provides for the assessment and 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.

- # Complete Operable Unit 2-13 field remedial action under comprehensive Record of Decision including regulatory inspection and certification of field remedial activities.
- # Submit final Remedial Action Report for Operable Unit 2-13 to regulators for review and approval.
- # Initiate long-term surveillance and monitoring activities at Operable Unit 2-13.

ID-ER-102	1,647	2,893	1,660
-----------------	-------	-------	-------

Metrics			
Remedial Action/Release Site			
Assessments	15.0	0.0	0.0
Cleanups	7.0	0.0	6.0

ID-ER-103 / Idaho Nuclear Technology and Engineering Center (formerly Idaho Chemical Processing Plant) Activities (WAG3)

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.)

- # In accordance with the Record of Decision issued in FY 1999, activities in FY 2000 are:
- # Begin the Tank Farm Soils Interim Actions (Surface Water Controls).
- # Provides for perched water recharge controls.
- # Continue monitoring of the Snake River Plain Aquifer.
- # Continue the separate tank farm Remedial Investigation/Feasibility Study.
- # Initiate source control remediation.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Complete Remedial Design/Remedial Action Work Plan.
- # Complete design and siting for the Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility.

The End State for Waste Area Group-3 is projected to be FY 2044. All contaminated soil areas will be remediated by FY 2006. Tank Farm Soils and soils under buildings will be under institutional controls to meet remedial action objectives. An interim remedy will be implemented at the Tank Farm by FY 2005 (limited contaminated soil removal and redirection of surface water infiltration). Remediation of the Tank Farm will follow the Tank Farm Remedial Investigation/Feasibility Study Record of Decision. Operations at the Waste Area Group will cease in FY 2035. Decontamination and decommissioning of buildings will be completed in FY 2044.

ID-ER-103	2,995	11,404	13,815
-----------------	-------	--------	--------

Metrics			
Remedial Action/Release Sites			
Assessments	0.0	38.0	0.0
Cleanups	0.0	11.0	0.0

ID-ER-106 / Radioactive Waste Management Complex (WAG 7)

This project is to complete assessment and remediation activities for the Radioactive Waste Management Complex, which was an 88 acre burial ground for transuranic, radioactive, and hazardous waste. The site was in operation from 1952 to 1970. The focus of this project is cleanup of radioactive and hazardous contaminants in accordance with a 1993 Record of Decision; to continue work on the Remedial Investigation/Feasibility Study to be completed in March 2000; and complete a final Record of Decision for all of Waste Area Group 7 in December 2002. Located within the Radioactive Waste Management Complex is the one acre Pit 9 Site. Pit 9 has been selected to demonstrate the feasibility of retrieving and treating transuranic, radioactive, and hazardous contaminants from waste burial sites in accordance with a 1993 Interim Record of Decision. The Alternate Pit 9

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Continue operation of the Operable Unit 7-08 vadose zone vapor vacuum extraction project.
- # Complete treatability studies for in-situ grouting and hot in-situ vitrification of radioactive waste.
- # Continue collection and analysis of groundwater, perched water, and lysimeter water samples.
- # Begin construction of the Pit 9 double enclosed retrieval structure.
- # Begin procurement of major waste retrieval and treatment equipment, and structural components in support of Pit 9 assessment activities.
- # Complete Pit 9 soil and contaminant treatability studies.
- # Complete Alternate Pit 9 Stage I Remedial Action Report.
- # Complete Alternate Pit 9 Stage II Remedial Design in support of Federal Facility Agreement and Consent Order milestones.

ID-ER-106	39,053	23,700	7,013*
-----------------	--------	--------	--------

* The total FY 2000 funding for this effort is \$50,013,000. \$43,000,000 of Pit 9 uncosted carryover will be available to provide for the Pit 9 phased alternative approach.

Metrics
 This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.

ID-ER-107 / Pit 9 Remediation (contract management)

As a result of the termination of the Pit 9 subcontractor, the project has since been restarted under a three-stage alternate approach. The work under the phased approach will be tracked under PBS ID-ER-106. Funding contained in this PBS supports ongoing legal activities resulting from the original Pit 9 subcontract termination.

- # Continue support for project office as well as legal fees associated with Pit 9.

ID-ER-107	0	2,941	2,379
-----------------	---	-------	-------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project</p>

ID-ER-108 / Site-wide Monitoring Area Remediation

Waste Area Group 6/10 consists of 38 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 Record of Decision, to be submitted in July 1999, will describe the final remedial actions which must be performed at these sites. Funding supports all regulatory requirements and completion of all remedial activities by FY 2005.

- # Provide general risk assessment support activities for all Waste Area Groups.
- # Provide Hydrologic Data Repository Support.
- # Complete Operable Unit 10-04 Idaho National Engineering and Environmental Laboratory Site-Wide Remedial Investigation/Feasibility Study Report.
- # Complete Operable Unit 10-04 Comprehensive Idaho National Engineering and Environmental Laboratory Site-Wide Remedial Investigation/Feasibility Study Proposed Plan and submit for public comment.
- # Complete Operable Unit 10-04 Remedial Design/Remedial Action scope of work.
- # Complete Operable Unit 10-04 Remedial Design/Remedial Action field activities at six sites.
- # Continue long-term site-wide monitoring of groundwater, ecological receptor, and unexploded ordnance sites.
- # Maintain institutional controls at potential unexploded ordnance sites.

ID-ER-108	3,386	3,529	6,144
-----------------	-------	-------	-------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

ID-ER-109 / Remediation Operation

This activity provides program management and support for assessment and cleanup projects conducted under the Federal Facilities Agreement/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 system planning and control, technical program integration, community relations, environmental/safety/health and quality planning and support, integrated project management reporting, cost engineering system management, configuration management and control, data management, decontamination and decommissioning program management and support, remedial designs/ remedial action program support, and Headquarters interface support, and the DOE Idaho remediation programmatic support. Other activities supported include: the State of Idaho’s involvement in the remediation program required by the Federal Facility Agreement and Consent Order; technical data development by the United States Geological Survey; and the university research foundation support to DOE to address stakeholder concerns, as well as, technical support contracts and grants to Indian tribes.

These activities are necessary to support and manage cost-effective remediation, decontamination, decommissioning, and deactivation programs with State and stakeholder involvement using state of the art cleanup techniques.

- # Continuation of program implementation responsibilities as defined in the planning descriptions in accordance with strategy for cost-effective program implementation.
- # Implementation of the wide variety of remediation related technical scope, including preparation of regulatory documents, preparation of baselines, management of data systems, and support for environmental, health and safety, and quality control requirements.
- # Support of State of Idaho under the Federal Facility Agreement and Consent Order.

ID-ER-109	14,955	19,872	14,984
-----------------	--------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics

No quantifiable corporate performance measures are associated with this project

ID-ER-110 / Decontamination and Decommissioning

This project is to eliminate the hazards posed by inactive radiologically contaminated facilities at the Idaho National Engineering and Environmental Laboratory, which may cause risk to site workers and the environment. The program end date for this project is FY 2044.

- # Complete the decontamination and decommissioning assessments at: Test Area North-609, Equipment Maintenance Shop; Test Area North-726, Hot Liquid Storage Vault; Test Area North-725, Exhaust Stack; Test Area North-647, Containment Storage Building; Test Area North-648, PREP; Test Area North-616, Liquid Waste Treatment Facility; Test Area North-704, Engineering Test Reactor Primary Filter Pit; Test Area North-705, Engineering Test Reactor Secondary Filter Pit; Test Area North-644, Heat Exchanger Building; Test Area North-755, Engineering Test Reactor Filter Pit Building; Test Reactor Area-655; Air Intake Building; Test Reactor Area-706, Delay Tanks; Test Reactor Area-643, Compressor Building; Test Reactor Area-760, Engineering Test Reactor Warm Waste Station; and Idaho Chemical Processing Plant-642, Hot Waste Pump House Pit (15) total.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Complete decontamination and decommissioning (removal of all hazardous and radioactive waste and dismantlement of buildings) of facilities at: Test Area North-609, Equipment Maintenance Shop; Test Area North-656, Change Room; Test Reactor Area-655, Air Intake Building; Test Reactor Area-704, Engineering Test Reactor Primary Filter Pit; Test Reactor Area-705, Engineering Test Reactor Secondary Filter Pit; Test Reactor Area-706, Delay Tanks; Test Reactor Area-755, Engineering Test Reactor Filter Pit Building; Test Reactor Area-760, Engineering Test Reactor Warm Waste Station; Test Reactor Area-660, Advanced Reactivity Measurement Facility; Chemical Processing Plant-642, Hot Waste Pump House Pit; Central Facility Area-716, Sewage Pit Septic Tank (11) total.

ID-ER-110	7,374	5,339	7,866
-----------------	-------	-------	-------

Metrics			
Facilities Decommissioning			
Assessments	2.0	5.0	15.0
Cleanups	4.0	8.0	11.0

ID-HLW-101 / High-Level Waste Pretreatment

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: high-level liquid waste, 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 by the end of April 1999, pending completion of an Environmental Impact Statement on the path forward for treatment and disposal of the liquid sodium bearing waste and calcine. This Environmental Impact Statement also addresses closure of the Idaho Nuclear Technology and Engineering Center waste facilities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Maintain calciner facility in standby while continuing to operate the evaporators and debris and filter treatment operations within the calciner facility.
- # Operate the High-Level Liquid Waste Evaporator to concentrate and reduce the volume of liquid stored in the tank farm.
- # Transfer of liquid waste from generators in the Idaho Nuclear Technology and Engineering Center area and retooling of the piping system to segregate Resource Conservation and Recovery Act waste from non-Resource Conservation and Recovery Act waste. New waste discharged to the tank farm will be minimized, segregated, and treated for disposal as low-level waste.
- # Continue surveillance and maintenance of the calcine bin sets. Maintain safe and compliant storage of calcine and liquid waste.
- # Perform treatment of mixed low-level waste debris from the Idaho Nuclear Technology and Engineering Center prior to land disposal.
- # Start up upgraded debris treatment operations.
- # Operate the filter leach process to reduce stored backlog of 250 highly contaminated filters and projected inventory of newly spent filters prior to land disposal.
- # Perform laboratory sample analyses to support process operations at the Idaho Nuclear Technology and Engineering Center waste facilities.
- # Technology development (laboratory and pilot plant activities) of the methods recommended for final treatment of the liquid waste and calcine will continue but will increase as the focus shifts to a recommended technology.
- # Initiate conceptual design for upgrades to the calciner to meet the new Environmental Protection Agency Maximum Achievable Control Technology Rule (to be implemented in FY 2002-2005) if a decision is made to select the calciner for pretreatment of the sodium-bearing waste.

ID-HLW-101	40,038	38,546	38,751
----------------------	--------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics			
High-Level Waste			
Treatment (m ³)	760.0	732.0	1,041.0
Storage (m ³)	9,367.0	9,062.0	8,085.0
Disposal (m ³)	0.0	0.0	0.0

ID-HLW-103 / High-Level Waste Treatment and Storage

This project is to design, construct, and operate the facilities needed to convert the pretreated waste and treat remaining liquid waste by 2035 to a final disposable form that is road ready to ship out of the State of Idaho. Calcined and remaining liquid waste requires additional treatment to be suitable for disposal in a geologic repository. The work performed under this project is for new facilities required to complete the high-level waste mission and for demonstration projects and other development work necessary to implement the selected technology(ies).

The Department of Energy is currently preparing an Environmental Impact Statement, which will determine the path forward on treatment and disposal of remaining liquid waste and calcine. The Environmental Impact Statement also addresses closure of the Idaho Nuclear Technology and Engineering Center's high-level waste facilities. The Environmental Impact Statement is analyzing a full range of reasonable options for treating the waste, including options that depend on resuming pretreatment of waste and those, which do not convert liquid waste to calcine. The Environmental Impact Statement treatment options look at various options for treatment and disposal of the waste, including vitrification, ceramification, radionuclide separation, grouting the low activity fraction of the waste, disposal in geologic repository, near surface disposal, above ground disposal.

- # Issue the Record of Decision for the Idaho National Engineering and Environmental Laboratory High-Level Waste and Facility Disposition Environmental Impact Statement.
- # Begin negotiating with the State of Idaho on the plan and schedule for treatment and disposal of the calcine.
- # If immobilization technologies are selected in the Record of Decision, a conceptual design will be initiated.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Sample and analyze the calcine and the liquid waste in the tanks to provide characterization data. This data is necessary for permitting current and future waste treatment facilities and for delisting petitions, which affects the acceptability of final waste form in a geologic repository.
- # Perform scalable demonstration projects associated with radioactive waste minimization, the Maximum Achievable Control Technology offgas sampling, and high temperature operation of the calciner. These projects are necessary to meet new regulatory requirements and Settlement Agreement milestones. Higher temperatures are needed to operate the calciner to treat sodium bearing waste and increase throughput. Demonstration projects are needed to confirm the results of engineering studies that only minimal modifications are needed to operate the calciner at higher temperature.

ID-HLW-103	18,312	13,053	24,674
------------------	--------	--------	--------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

ID-HLW-105 / Low Activity Waste Treatment

The purpose of this project is to close the 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 treat and dispose of newly generated liquid waste to support tank closures.

By FY 2005, the Department of Energy will immobilize the tanks heels in place for two of the 300,000 gallon tanks in the high-level waste tank farm. This will be followed by the immobilization of tank heels and closure of three additional tanks by FY 2009, with the remaining tanks ready for closure by FY 2012. It is expected that grouting systems will be used to grout tank heels and to treat newly generated low-level liquid waste that would otherwise have been put into the high-level waste tank farm.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Conceptual design for closure of the emptied tanks in the tank farm will be completed.
- # Draft tank closure plans will be prepared and the public comment process initiated.
- # Develop alternative methods for treating newly generated liquid waste.

ID-HLW-105	0	2,108	5,712
------------------	---	-------	-------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

ID-LRP-101 / Environmental Engineering and Science Center

Provides for activities under the Idaho Long-Range Plan, including complex-wide integration and systems engineering support.

- # Funding is continued in the Defense Science and Technology Budget request for FY 2000.

ID-LRP-101	8,000	61	0
------------------	-------	----	---

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

ID-OIM-101 / Site-wide Landlord Operations

This project performs core functions for site-wide base support, facility upgrades, capital acquisitions, and facility disposal initiatives. Also included in this project is an initiative to demolish and dispose of surplus non-radioactively contaminated buildings and facilities that are deteriorating and pose a possible physical hazard to site personnel.

- # Continue Emergency Preparedness, Seismic Monitoring, Environmental Monitoring, Integrated Planning Activities, and Meteorological Monitoring.
- # Complete approximately 20 percent of backlog of maintenance and repair safety and health corrections items.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Purchase, install, and make fully operational all approved FY 1999 and prior general purpose/capital equipment acquisitions. The equipment is used for security, radiological monitoring, calibrations, telecommunications and maintenance, and supports environmental compliance, the Resource Conservation and Recovery Act, and Safety Requirements.
- # Complete construction of five of eight previously approved general plant projects. The projects support telecommunications, fire suppression, emergency response, and emissions monitoring.
- # Operation and maintenance of the Experimental Breeder Reactor-I National Monuments as required by the Historic Sites Act.
- # Upgrade antiquated sitewide computer systems.
- # Funding of the Citizens Advisory Board and Payments-in-Lieu-of-Taxes for state and county.

ID-OIM-101	23,076	29,604	34,626
------------------	--------	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

ID-OIM-102 / Idaho Nuclear Technology and Engineering Center (Formerly Idaho Chemical Processing Plant) Infrastructure Operations

This project is to perform the core functions required by multiple and varied programs at the Idaho Nuclear Technology and Engineering Center (formerly the Idaho Chemical Processing Plant) including operation, nuclear safety engineering environmental compliance, maintenance of the non-process plant facilities and services; including utilities and plant-wide infrastructure. 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.

- # Incorporate process efficiencies identified through activity-based cost estimating methodology.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Upgrade and repair utility and facility structures and systems.
- # Provide the utilities, landlord services, roads and grounds, non-process facilities, nuclear safety, environmental compliance, and plant-wide infrastructure supporting the high-level waste, spent nuclear fuel, and facility deactivation programs.
- # Maintain structural roof and interior/exterior building integrity.
- # Provide crosscutting services such as nuclear safety analysis; environmental, safety and health oversight; and quality assurance to the facility deactivation, high-level waste, and spent nuclear fuel programs.
- # Provide engineering, document control, and work control support to the various programs.
- # Provide stewardship and management of special nuclear material.
- # Install, implement, and maintain the Idaho Nuclear Technology and Engineering Center Computerized Maintenance System.
- # Perform Russian Criticality Experiments.
- # Implement plant-wide computer-based training and maintained plant-wide training requirements.
- # Begin construction of the Chemical Processing Plant 606 upgrades - General Plant Project.
- # Initiate conceptual design of two Line-Item Construction Projects: Cathodic Protection System and the Process Water Treatment System.
- # Begin construction on the Telephone Switchgear Facility - General Plant Project.
- # Provide safeguards and security for the stewardship of special nuclear material and spent nuclear fuel.
- # Proper material management practices and safeguard and security measures would be provided to ensure that the special nuclear material contained in Chemical Processing Plant-651 Building is adequately protected and cared for per DOE Orders 5632.1c and 5500.3a.

ID-OIM-102 51,240 60,165 51,283

**Environmental Management/Defense
Environmental Restoration and Waste
Management/Post 2006 Completion/Idaho**

FY 2000 Congressional Budget

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

ID-OIM-116 / Environmental Legacy Compliance (VCO)

This project will fund corrective actions required to bring the Idaho National Engineering and Environmental Laboratory into regulatory compliance with Resource Conversation and Recovery Act as directed by the State of Idaho Division of Environmental Quality and the Department of Energy. Seven items in the Voluntary Consent Order must be addressed by FY 2000, six of which are funded by Environmental Management, and one by the Office of Nuclear Energy.

- # Complete Inadequate Hazardous Waste Determination on Test Reactor Area Legacy Waste and disposition of 25 percent of waste.
- # Submit determination report for Active Hazardous Waste Tanks to be placed on permit or closed.
- # Complete system identification for the Idaho Nuclear Technology and Engineering Center active systems. Complete system identification for remaining systems for tanks requiring Hazardous Waste Determination or Verification of empty.
- # Transfer New Waste Calcining Facility to Chemical Processing Plant-601 D-Cell for Storage of Calcine and Calcine Handling Tools at New Waste Calcining Facility.
- # Characterize Chemical Processing Plant-603 Basin Water Sand Filter and Demineralization System.
- # Submit draft Resource Conversation and Recovery Act closure plan and schedule for Division of Idaho Environmental Quality review and the Department of Energy revision for Test Reactor Area-630.

ID-OIM-116	0	0	9,077
------------------	---	---	-------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

ID-SNF-101 / National Spent Nuclear Fuel Program

This project is to facilitate implementation of the Department of Energy’s Spent Nuclear Fuel research, development, and testing of technologies for treatment, shipment, and disposal.

- # Provide to the Office of Civilian Radioactive Waste Management all outstanding information on the Department of Energy’s Spent Nuclear Fuel needed to issue the final Environmental Impact Statement for the repository and to support the preparation of a Nuclear Regulatory Commission license application by compiling information from all DOE spent nuclear fuel sites.
- # Complete the electrometallurgical treatment qualifications of product form for disposal.
- # Continue core science and exploratory studies to ensure acceptance of DOE spent fuel by the DOE Office of Civilian Radioactive Waste Management.
- # Support repository design to accommodate DOE spent fuel and EM specific requirements.

ID-SNF-101	21,952	26,092	14,275
------------------	--------	--------	--------

Metrics			
Spent Nuclear Fuel			
Stabilized (MTHM)	0.5	0.0	0.0

ID-SNF-102 / Integrated Spent Nuclear Fuel Program

This project is to support compliance with the Idaho Settlement Agreement through program management and support, technology development, continued fuel receipts, and fuel shipments to other Department of Energy sites.

Beginning in FY 1999, the Foreign Research Reactor Spent Nuclear Fuel Program work scope was moved to ID-SNF-103 for improved operational coordination.

- # Finalize preparations for shipping and receipt of spent nuclear fuel from West Valley, beginning in FY 2001, in support of agreement with the New York State regulators.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

# Initiate negotiations with the regulators in December 1999 to establish a schedule to transfer all spent nuclear fuel out of wet storage.			
# Provide technology development to support Spent Nuclear Fuel transfers to dry storage and ultimate out-of-State disposal.			
# Provide Spent Nuclear Fuel data to the National Spent Nuclear Fuel Program to support repository Environmental Impact Statement and license application.			
ID-SNF-102	20,683	9,159	7,689

Metrics This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.
--

ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities

This project is to remove all spent nuclear fuel from the following facilities at the Idaho National Engineering and Environmental Laboratory: Chemical Processing Plant-603 and Chemical Processing Plant-666 underwater basin storage; Test Area North underwater pool and dry pad storage; Chemical Processing Plant-749 Dry Storage Facility; Irradiated Fuel Storage Facility; Department of Energy Dry Storage Facility; and Privatized Dry Storage Facility. This project also manages the receipt of Foreign Research Reactor spent nuclear fuel in support of the United States non-proliferation policy.

- # Continue the receipt of the Naval and Advanced Test Reactor Spent Nuclear Fuel.
- # Continue removal of the Three Mile Island-2 fuel from wet storage with planned completion in FY 2001 per the Idaho Settlement Agreement.
- # Continue wet spent nuclear fuel storage in the Chemical Processing Plant-666, while awaiting future dry storage.
- # Complete transfer of spent nuclear fuel from first to second generation storage at the Chemical Processing Plant-749.
- # Continue to receive shipments of foreign research reactor spent nuclear fuel and perform associated stakeholder activities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Funding provides for planning, inspections, and site preparations for future receipts in execution of the Foreign Research Reactor Spent Nuclear Fuel Environmental Impact Statement Record of Decision. These foreign research reactor spent nuclear fuel returns are a critical part of the Department's effort to support the United States non-proliferation policy.

ID-SNF-103 29,524 37,920* 30,601*

* In addition to this funding, the Department's Cost of Work for Others program includes \$3,100,000 in FY 1999 and \$1,800,000 in FY 2000 of revenues received for the Foreign Research Reactor receipt program at Idaho.

Metrics			
Spent Nuclear Fuel			
Stabilized (MTHM)	0.0	6.0	53.1

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

ID-WM-105 / AMWTP Production Operations

The Idaho Settlement Agreement requires a minimum of 3,100 m³ of stored transuranic waste to be shipped out of the state by December 2002 (discussed under ID-WM-103 in the Defense Site/Project Completion Budget account). The approximately 61,900 m³ of stored transuranic waste remaining will be treated in the privatized Advanced Mixed Waste Treatment Project to meet the Waste Isolation Pilot Plant waste acceptance criteria or other appropriate disposal facility requirements before it is shipped for disposal. This project supports Phase I of the Advanced Mixed Waste Treatment Project, including preliminary facility and process design activities; environmental regulatory permitting; National Environmental Policy Act evaluation; the Department of Energy Environment, Safety and Health Authorization; other project/technical support; and Phase III of the project, which includes payments to the vendor for operating the facility after construction. The capital asset acquisition of the Advanced Mixed Waste Treatment Project (ID-WM-104) is discussed in the Defense Environmental Management Privatization Budget account. All stored transuranic waste is planned to be removed from Idaho by December 31, 2015, but no later than December 31, 2018, as required by the Idaho Settlement Agreement. The Advanced Mixed Waste Treatment Project will treat mixed waste streams identified in the Idaho National Engineering and Environmental Laboratory Site Treatment Plan required by the Federal Facility Compliance Act of 1992. The Advanced Mixed Waste Treatment Project will undergo decontamination and decommissioning and the Resource Conservation and Recovery Act closure after scheduled completion of treatment in FY 2015, unless DOE extends the contract to treat additional Idaho National Engineering and Environmental Laboratory and non-Idaho National Engineering and Environmental Laboratory waste.

Provides for project and technical support for the Advanced Mixed Waste Treatment Project, for Phase II (construction) efforts.

ID-WM-105	3,212	8,610	527
-----------------	-------	-------	-----

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics

This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.

ID-WM-106 / Site-wide Environmental Protection

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.

- # Support environmental, safety, health, quality, and risk Assessments and audits.
- # Perform independent oversight and monitoring of the Idaho National Engineering and Environmental Laboratory operations via the State of Idaho and monitoring and surveillance of water and air quality by the U.S. Geological Survey; pursue cooperative research opportunities.
- # 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 Lockheed Martin Idaho Technology Company Site-wide Environmental Monitoring Report summarizing site-wide environmental monitoring activities, and drinking water reports.
- # Submit the annual State of Idaho Well Permit Application.
- # Environmental monitoring activities to support DOE Orders 5400.1 and 5820.2a will be completed.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The floodplain assessment required by 100 CFR 1021 and 1022 will be completed.

ID-WM-106 5,176 6,988 7,508

Metrics No quantifiable corporate performance measures are associated with this project
--

ID-WM-108 / Integrated Waste Operations Program

This project defines technical, regulatory, and integrating initiatives targeting cost efficiencies that could not be achieved within the individual projects. This project includes those activities that crosscut all other waste management projects. This project also provides funding for waste operations, technical, regulatory, projects integration, safety and health corrective action plans and integrated data management.

- # Maintain the Site Treatment Plan mixed waste inventory and hold quarterly Idaho National Engineering and Environmental Laboratory and State of Idaho meetings.
- # Add new off-site mixed waste streams to the Idaho National Engineering and Environmental Laboratory Site Treatment Plan and complete mixed waste treatment arrangement.
- # Perform preventative maintenance on packaging; renew Certificates of Compliance; complete study for a single packaging custodian for the Idaho National Engineering and Environmental Laboratory; and provide engineering support for shipments of all waste types and spent nuclear fuel.
- # Update the “Accelerating Cleanup: Paths to Closure” document, as necessary, to reflect changes to the management baseline.
- # Develop and implement the Idaho National Engineering and Environmental Laboratory Integrated Waste Tracking System to track site-wide waste inventory.
- # The Environmental Monitoring and Oversight Agreement with the State of Idaho, the Environmental Research Foundation, the Citizens Advisory Board, the Environmental Permitting with the State of Idaho, and funding for the United States Geological Survey will be provided.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The transportation consolidated management function will be funded.

ID-WM-108	13,259	14,159	12,161
-----------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project
--

Total, Idaho	304,380	317,046	291,253
--------------------	---------	---------	---------

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

HQNP-SI01-ID / Security Investigations

No change in FY 2000. 0

ID-CTREXC-101 / Low-Level Waste/Mixed Low-Level Waste Center of Excellence

Decrease reflects no FY 2000 activity. -395

ID-ER-102 / Test Reactor Area Remediation (WAG 2)

Decrease in funding is due to decrease in activity as project nears completion. -1,233

ID-ER-103 / Idaho Chemical Processing Plant Activities (WAG 3)

Increase reflects moving from Pre-Record of Decision, (preparation of documents) to actual remediation. 2,411

ID-ER-106 / Radioactive Waste Management Complex Activities (WAG 7)

Reflects implementation of alternate Pit 9 activities. Funding supports purchase of major waste retrieval and treatment equipment as well as building components, material handling cells, and off-gas system and filters. The decrease in FY 2000 funding will be offset by the use of prior year funding of \$43,000,000 that was originally appropriated for this work scope. -16,687

ID-ER-107 / Pit 9 Remediation

Decrease reflects reduced program support funding. As a result of the termination of the Pit 9 subcontractor, this remediation project has been restarted under PBS ID-ER-106 using a three stage alternate approach. -562

FY 2000 vs. FY 1999 (\$000)

ID-ER-108 / Site-wide Monitoring Area Remediation

Increase in funding reflects increase in a number of sites to be evaluated and native American concerns with economic risk. 2,615

ID-ER-109 / Remediation Operations

Decrease reflects program now devoted to remediation versus assessment activities; and curtailment of other activities such as the National Recognition and New Business Development initiative, as cost savings measures. -4,888

ID-ER-110 / Decontamination and Decommissioning

Increase will allow ten additional assessments and decommissioning of three facilities. 2,527

ID-HLW-101 / High-Level Waste Pretreatment

The increase will expedite debris treatment operations and increase processing of contaminated filters. 205

ID-HLW-103 / High-Level Waste Treatment and Storage

Increase includes projected ramp up of work associated with technology demonstration and conceptual design associated with selected technologies. 11,621

ID-HLW-105 / Low Activity Waste Treatment

Increase to begin accelerated conceptual design for closure of waste tanks and develop alternative methods for treating newly generated liquid waste. 3,604

ID-LRP-101 / Environmental Engineering Center

Funding for FY 2000 is requested in the Defense Science and Technology Budget request. -61

ID-OIM-101 / Site-wide Landlord Operations

Increase includes funding for the facility disposal initiative, business systems upgrade, and environmental compliance corrective activities. 5,022

ID-OIM-102 / Idaho Nuclear Technology and Engineering Center (formerly Idaho Chemical Processing Plant) Infrastructure Operations

Decrease reflects completion of several projects, shift in surveillance and maintenance requirements, and reduced funding for training. -8,882

ID-OIM-116 / Environmental Legacy Compliance (VCO)

Increase provides for additional corrective actions required to bring the Idaho National Engineering and Environmental Laboratory into regulatory compliance. 9,077

FY 2000 vs. FY 1999 (\$000)

ID-SNF-101 / National Spent Nuclear Fuel Program

Decrease reflects peak in FY 1999 of workscope to provide information on DOE Spent Nuclear Fuel activities for the Office of Civilian Radioactive Waste Measures repository viability assessments Environmental Impact Statement and Nuclear Regulatory Commission license application. Some work scope moved out to FY 2001. -11,817

ID-SNF-102 / Integrated Spent Nuclear Fuel Program

Reduced technology development associated with fuel transfers to dry storage and repository preparations. -1,470

ID-SNF-103 / Emptied Spent Nuclear Fuel Facilities

Decreased activities associated with the Chemical Processing Plant-603 as fuel transfers are completed and the facility is transferred to deactivation. Also, decreased fuel transfer preparations from Chemical Processing Plant-666 requiring extended underwater storage and decreased funding for Foreign Research Reactor fuel receipts due to reduced shipments and previously established receipt protocols and equipment and procedural standardization. -7,319

ID-WM-105 / AMWTP Production Operations

Decrease reflects completion of all Phase I activities in FY 1999, leaving only minimal requirements for project and technical support during Phase II (construction) efforts. . -8,083

ID-WM-106 / Site-wide Environmental Protection

The increase supports the Idaho National Engineering and Environmental Laboratory in performing additional Clean Air Act Title V permitting and environmental monitoring activities, negotiations or regulatory interpretations with the State of Idaho, and flood plains assessments required under 10 CFR 1021 and 1022. 520

ID-WM-108 / Integrated Waste Operations Program

Decrease reflects completion of safety and health corrective action plans, stemming from the July 1998 Idaho National Engineering and Environmental Laboratory worker fatality. -1,998

Total Funding Change, Idaho -25,793

Major Issues

- # Delay in opening the Waste Isolation Pilot Plant for receipt of mixed transuranic waste jeopardizes Idaho's ability to meet the Settlement Agreement Milestones to ship 3,100 cubic meters of transuranic waste out of Idaho by December 31, 2002.
- # To meet the Settlement Agreement, DOE spent fuel must be included in the Nuclear Regulatory Commission license application for High-Level Waste/Spent Fuel Repository being submitted by the Post 2006 National Spent Fuel Program. Adequate funding must be provided in FY 2000 to support this activity.
- # Idaho's budget request is compliance-based. Only minimal mortgage reduction activities will be funded in the FY 2000 request, requiring a continued high-level of surveillance and maintenance (costs) for abandoned (contaminated) facilities.

Nevada

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Environmental Management, Post 2006 Completion program, 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 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 address 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 and/or relinquish to the Bureau of Land Management by the end of FY 2006. Institutional control of the subsurfaces will be retained by the Department of Energy and the ground water will be monitored for up to 100 years to ensure there is not risk to the public.

Program Objectives

The objective of the Nevada Operations Office Environmental Management Program is to address the legacy of contamination resulting from approximately 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. Nine Environmental Management Program elements (four Environmental Restoration, three Waste Management, Agreements-in-Principles/Grants, and Program Integration) have been developed to characterize and remediate, as applicable, inactive sites and facilities and for waste management operations.

The environmental restoration program includes the Soils Project which addresses radiologic contamination in the surface soils. 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 Industrial Sites Project addresses contamination resulting from use of 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 Offsites Project addresses contamination resulting from historic testing activities which occurred at eight sites in five states (Arkansa, Colorado, Missouri, 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 2000. 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.

Agreements-in-Principle/Grants provide funding for state oversight activities and support of Department initiatives. 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.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by site table; as well as at a project level, in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Completed characterization (FY 1998) and initiate remediation of Clean Slate 2 Plutonium Dispersion Site (FY 1999).
- # Completed Frenchman Flat Contaminant Boundary Modeling (FY 1998) and complete Containment Boundary Report and Correction Action Decision Document (FY 1999).
- # Completed Western Pahute Mesa Corrective Action Investigation Plan (FY 1998).
- # Completed Final Bullion Forced Gradient Experiment Report (FY 1998).
- # Completed construction of 6 drill pads and 35 miles of roads in support of deep ground water monitoring well installation on Nellis Air Force Range (FY 1998).
- # Completed remediation of 15 Resource Conservation and Recovery Act industrial sites in FY 1998 and complete nine more in FY 1999 on the Nevada Test Site and Tonopah Test Range.

- # Completed remediation of surface ground zero mud pits at the Project Salmon Site, MS (FY 1998) and complete subsurface Record of Decision (FY 1999).
- # Negotiated and put in place a joint Department of Energy/State oversight agreement with the State of Nevada for the Department of Energy low-level waste disposal operations at the Nevada Test Site (FY 1998).
- # Complete remediation of Clean Slate 1 Plutonium Dispersion Site (FY 1999).
- # Initiate installation of four deep ground water monitoring wells for monitoring contaminated ground water flow toward Oasis Valley, Nevada from the Nevada Test Site (FY 1999).
- # Completed ground water modeling effort at Amchitka Island, Alaska (FY 1999).
- # Complete disposal of approximately 11,059 m³ (FY 1998) and 37,742 m³ (FY 1999) of the Department of Energy complex low-level wastes at the Nevada Test Site.
- # Complete treating approximately 15 m³ (FY 1998) and 91 m³ (FY 1999) of transuranic waste, making it disposal ready for shipment to the Waste Isolation Pilot Plant in New Mexico.
- # Issue Draft Environmental Assessment on Internal Transportation of Low-Level Waste to the Nevada Test Site (FY 1998), which addresses stakeholder concerns associated with transportation through the populated Las Vegas corridor, for public review.

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
NV202 / AIPs/Grants	3,736	3,473	4,068	595	17.1%
NV211 / Soils	1,460	6,056	5,696	-360	-5.9%
NV212 / Underground Test Area (UGTA)	20,277	29,009	33,236	4,227	14.6%
NV214 / Industrial Sites	13,000	10,800	11,405	605	5.6%
NV240 / Off-sites	3,933	7,036	8,634	1,598	22.7%
NV350 / TRU/Mixed TRU	5,628	5,141	6,483	1,342	26.1%
NV360 / Mixed Low-Level Waste	677	744	388	-356	-47.8%
NV370 / Low-Level Waste	5,542	5,420	5,864	444	8.2%
NV400 / Program Integration	14,665	12,402	9,533	-2,869	-23.1%
Total, Nevada	68,918	80,081	85,307	5,226	6.5%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Nevada Test Site	64,985	73,246	76,673	3,427	4.7%
Nevada Operations Office	3,933	6,835	8,634	1,799	26.3%
Total, Nevada	68,918	80,081	85,307	5,226	6.5%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Site			
Assessments	34.0	64.0	18.0
Cleanups	31.0	34.0	37.0
Facility Decommissioning			
Assessments	0.0	0.0	0.0
Cleanups	1.0	0.0	0.0
Deactivation	0.0	0.0	0.0
Transuranic Waste			
Treatment (m ³)	78.0	91.0	180.0
Storage (m ³)	671.0	671.0	394.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	0.0	0.0	277.0
Mixed Low-Level Waste			
Storage (m ³)	12.6	0.0	0.0
Treatment (m ³)	13.3	0.0	0.0
DOE On-site/Commercial/Disposal (m ³)	263.5	0.0	0.0
Disposal - Ship to DOE Disposal Site (m ³)	0.0	0.3	0.0
Low-Level Waste			
Disposal - DOE On-site/Commercial (m ³)	11,059.0	37,742.0	64,164.0

Site Description

Nevada Test Site

The Nevada Test Site is located 65 miles northwest of the city of Las Vegas and encompasses 1,350 square miles, an area roughly the size of Rhode Island. The activities are wide-spread, as well as geographically diverse, and are the result of approximately 1,054 historical above-ground and below-ground nuclear tests, which were conducted primarily at the Nevada Test Site. In addition to surface cleanup, the regional ground water 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 radioactive wastes generated by the 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.

Detail Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Nevada Operations Office Environmental Management Program is managed through a performance-based management and operating contract and a cost-plus incentive fee architect-engineer service 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 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the *Accelerating Cleanup: Paths to Closure*. Costs 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 2000 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 / AIPs/Grants

This project provides support for grants and various agreements with the states where the Department of Energy - Nevada Operations Office 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 include community involvement mechanisms, educational endeavors, and various research and development projects.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Funding of Agreements-in-Principle/Grants facilitates ongoing dialogue with regulators and stakeholder groups to develop common approaches and agreements if aggressive “Paths to Closure” goals are to be met. In many instances, funding provided through the Agreements-in-Principle is required for compliance with the Federal Facility Compliance Act and the Comprehensive Environmental Response, Compensation, and Liability Act. In other instances, the Agreements-in-Principle fund contractual agreements with various States to provide regulatory oversight, establish specific site sampling and monitoring requirements, and facilitate the undertaking of appropriate corrective actions. The grant programs fund stakeholder involvement and independent third-party oversight of the Department of Energy programs.

NV202	3,736	3,473	4,068
-------------	-------	-------	-------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

NV211 / Soils

The Soils project addresses contaminated surface and shallow subsurface soils of 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 contaminations 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 Soil Project will complete characterization of all sites comprising the project, complete remediation of surface soils to an established level and remediate only the hot spots located within sites identified as future testing zones at the Nevada Test Site, and maintain access control to the sites.

Complete assessment of Clean Slates 3 Plutonium Dispersion Site; continue assessment and complete Corrective Action Investigation Plan for GMX Site; complete assessment of Project 57 Site.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Funding of Soils projects will focus on remediation sites outside the Nevada Test Site boundaries to reduce human health risks associated with exposure to radiological contamination. These activities result in reduced out year mortgage costs by eliminating the need for institutional control through site closure. Funding supports closure of sites prior to FY 2006.

NV211	1,460	6,056	5,696
-------------	-------	-------	-------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

NV212 / Underground Test Area

The Underground Test Area Project focuses on the 921 underground nuclear detonations that were conducted in 88 shafts and tunnels on the Nevada Test Site between 1951 and 1992. The underground test areas have been grouped into six units, each of which is based upon geography and other elements common to the detonation locations. The six corrective actions units have contaminant sources that differ from each other and hydro geologic characteristics specific to their geographic location. Tritium is the contaminant of 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.

Complete Corrective Action Investigation Plan for Yucca Flat; Complete installation of four deep ground water monitoring wells to monitor potential contaminant migration in the Oasis Valley area.

Funding supports ground water monitoring wells modeling activities to assess the potential for contaminant migration as required by the Federal Facilities Agreement and Consent Order.

NV212	20,277	29,009	33,236
-------------	--------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics	FY 1998	FY 1999	FY 2000
Remedial Action/Release Sites			
Assessments	0.0	10.0	0.0

NV214 / Industrial Sites

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 456 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 256 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 ordinance items, and radioactive and mixed waste. The Project will complete characterization and required remedial actions and implement required monitoring activities at all sites.

- # Complete Corrective Action Decision Documents for 7 Corrective Action Units on the Nevada Test Site and 2 Corrective Action Units on Tonopah Test Range; complete remediation of 1 Corrective Action Unit on the Nevada Test Site and 1 Corrective Action Unit on Tonopah Test Range.
- # Funding supports characterization and remediation of various corrective action units as legally required by the Federal Facilities Agreement and Consent Order. Aggressive characterization will reduce or eliminate the need for remediation and post-closure expenditures at many sites, effectively reducing mortgage costs. Funding will accomplish the end state more quickly and cost-effectively and assure that the "Paths to Closure" goals are attained.

NV214	13,000	10,800	11,405
-------------	--------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics			
Remedial Action/Release Sites			
Assessments	34.0	8.0	18.0
Cleanups	27.0	34.0	3.0
Facility Decommissioning			
Cleanup	1.0	0.0	0.0
Building Not Yet Deactivated			

NV240 / Off-Sites

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. If necessary, remediation activities will be conducted to allow release of the surface areas for alternative use and/or relinquished to the Bureau of Land Management. Subsurface areas will be modeled and monitored. Subsurface restrictions will remain in effect to prohibit access to radioactive contamination, and ground water will be monitored for a period of 100 years to ensure lack of access to contaminated ground water. Corrective actions of 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 surface Closure Report and subsurface Corrective Action Plan for the Central Nevada Test Area, Nevada; initiate remediation of surface sites at the Project Salmon Site, Mississippi; continue long-term ground water monitoring at eight off-site test locations.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Funding supports characterization and remediation of various corrective action units as required by Agreements-in-Principle with the States of Nevada, Mississippi, and Alaska. Access to these sites is largely uncontrolled and aggressive characterization supports timely assessment of site risk and supports releasing the surface areas for alternative use and/or relinquished to the Bureau of Land Management. Adequate characterization allows focused remediation and eliminates the need for remediation and post-closure expenditures at many sites. Funding will assure that the "Paths to Closure" goals are attained

NV240	3,933	7,036	8,634
-------------	-------	-------	-------

Metrics			
Remedial Action/Release Sites			
Assessments	0.0	46.0	0.0
Cleanups	4.0	0.0	34.0

NV350 / Transuranic Waste/Mixed Transuranic Waste

The Transuranic/Mixed Transuranic project will store, characterize, segregate, repackage, and ship 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. The Rocky Flats waste stream must be declassified before it can be shipped to the Waste Isolation Pilot Plant for disposal. 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, have been in progress in order to meet 40 CFR 191. 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.

Continue characterization and repackaging of transuranic/mixed transuranic waste in the Waste Examination Facility.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Complete radiography, radioassay, and headspace gas sampling of more than 50 percent of transuranic/mixed transuranic waste.

Continue with preparation of disposal ready transuranic/mixed transuranic waste for future shipment to the Waste Isolation Pilot Plant.

Finalize Greater Confinement Disposal Draft Performance Assessment; and continue with its internal peer review.

NV350 5,628 5,141 6,483

Metrics			
Transuranic Waste			
Treatment (m ³)	78.0	91.0	180.0
Storage (m ³)	671.0	671.0	394.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	0.0	0.0	277.0

NV360 / Mixed Low-Level Waste

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. 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.

Continue to interact with the State regulators for newly generated and legacy mixed low-level waste and manage them accordingly.

NV360 677 744 388

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics			
Mixed Low-Level Waste			
Treatment (m ³)	13.3	0.0	0.0
Storage (m ³)	12.6	0.0	0.0
Disposal Ship to - DOE Disposal Site (m ³)	0.0	0.3	0.0
Disposal - DOE On-site/Commercial (m ³)	263.5	0.0	0.0

NV370 / Low-Level Waste

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 ground water, and relatively slow movement of ground water off-site, the Nevada Test Site is ideally suited for this role as the disposer of the low-level waste. 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 Department of Energy remediation efforts and other related 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.

- # Continue to dispose on-site and off-site generated low-level waste at the Nevada Test Site.
- # All other low-level waste support work will continue.
- # Update and maintain performance assessments for Areas 3 and 5 disposal sites.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Complete construction of closure cap for U3ax/bl disposal unit.

Complete design of Post Closure monitoring, prepare construction package, and technical data collection for U3bh disposal unit.

NV370	5,542	5,420	5,864
-------------	-------	-------	-------

Metrics			
Low-Level Waste			
Disposal - DOE On-site/Commercial (m ³)	11,059.0	37,742.0	64,164.0

NV400 / Program Integration

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.

In all years, provides for: Program Integration including the site strategic and program planning and integration, as well as program management and control. These activities include the Paths to Closure; Strategic Plans; Program and Project Plans; project and cost control systems; community and stakeholder meetings and workshops regarding DOE/EM activities; training; safety and health documentation; Operation and Maintenance Plans and Contingency Plans; quality assurance and self-assessment; maintenance of Performance Measurement System to support the Government Performance and Results Act; cost estimate reviews and cost validations; and local transportation planning.

NV400	14,665	12,402	9,533
-------------	--------	--------	-------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics No quantifiable corporate performance measures are associated with this project
--

Total, Nevada	68,918	80,081	85,307
---------------------	--------	--------	--------

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

NV202 / AIPs/Grants

Funding provided for continued implementation of the Federal Facilities Agreement and Consent Order activities with the State of Nevada, support of Agreements-in-Principle with three states, and community outreach and university research programs. 595

NV211 / Soils

Reduction due to change in project priorities and completion of Clean Slates II in FY 1999. -360

NV212 / Underground Test Area

Increase reflects completion of installation of four deep ground water monitoring wells and beginning of sampling and analysis to determine potential migration of plutonium contaminants in the Oasis Valley. 4,227

NV214 / Industrial Sites

Provides for acceleration and completion of activities including Area 2 U2-bu Subsidence Crater and Roller Coaster Rad Safe Area on Tonopah Test Range. 605

NV240 / Off-sites

Provides for acceleration of surface cleanup activities at the Central Nevada Test Area. 1,598

FY 2000 vs. FY 1999 (\$000)

NV350 / TRU/Mixed TRU

Increase expedites completion of waste characterization work to prepare transuranic waste for shipment to the Waste Isolation Pilot Plant. 1,342

NV360 / Mixed Low-Level Waste

Decrease reflects completion of treatment and disposal of mixed low-level waste. -356

NV370 / Low-Level Waste

Reflects increased volumes of low-level waste disposed. 444

NV400 / Program Integration

Decrease reflects elimination of funding provided for the Community Advisory Board activities, innovative cleanup technology implementation, and local emergency response and preparedness training programs due to budget constraints. -2,869

Total Funding Change, Nevada 5,226

Oak Ridge

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Post 2006 Completion Environmental Management 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 Oak Ridge includes 60 percent of the total the Department of Energy complex low-level waste inventory, 48 percent of the complex-wide mixed low-level waste inventory, and 80 percent of the total Department 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 ton 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.

Program Goal

The Oak Ridge Operations Office is committed to have all spent nuclear fuel shipped to the Idaho National Engineering and Environmental Laboratory and the Savannah River Site for long-term storage by FY 2003, have all legacy transuranic waste treated and disposed by FY 2006, have all legacy mixed waste treated and disposed by FY 2008, have all remedial action sites completed by FY 2013, and have all legacy low-level waste disposed by FY 2019. The Oak Ridge Operations Office is further 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.

Program Objectives

By FY 2006, all legacy transuranic waste will be treated and disposed, 95 percent of all legacy mixed waste will be treated and disposed, and 60 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, cleanup of off-site properties, and an 85 percent reduction in the Environmental Management footprint of the Oak Ridge Reservation. These activities assume a cumulative enhanced performance efficiency of about 30 percent.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by Site table; as well as, at a project level in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Awarded the innovative Management and Integration contract for the environmental management activities at the Oak Ridge, Paducah, and Portsmouth sites (FY 1998).
- # Performed all necessary activities to compliantly treat, store, and dispose all applicable waste types at Oak Ridge (FY 1998/FY 1999).
- # Awarded the commercial Broad Spectrum Mixed Waste Treatment procurement contracts (FY 1998).
- # Awarded the Transuranic Privatization treatment contract (FY 1998).
- # Completed three waste management line-item construction projects (FY 1998).
- # Stabilized 0.032 m³ (0.013 MTHM) of spent nuclear fuel in FY 1998 and 0.132 m³ or 0.015 MTHM to stabilize in FY 1999.
- # Completed all shipments (11 canisters) of aluminum clad fuel to the Savannah River Site (FY 1998).
- # Retrieved and repackaged 15 canisters of spent nuclear fuel for shipment to the Idaho National Engineering and Environmental Laboratory (FY 1998).
- # Award contract to construct and operate an on-site disposal cell for cleanup waste, pending regulatory approvals (FY 1999).
- # Issue Phase I Record of Decision for the Bear Creek Valley Watershed.
- # Issue decision documents to conduct removal actions for the Upper East Fork Poplar Creek plume and salvage yard projects.
- # Eliminate 37 percent of the legacy mixed waste stored on the three Oak Ridge sites, and Paduch and Portsmouth (FY 1999).
- # Complete removal of spent nuclear fuel from Facility 7823 (FY 1999).
- # At the Oak Ridge Reservation, will commercially treat and dispose of 150 metric tons of hazardous waste, dispose of 68,000 m³ of sanitary and industrial waste in the Department of Energy landfills on the Y-12 Plant site, treat over 1,949 m³ of mixed low-level waste (14 percent of the total Oak Ridge Reservation inventory) and dispose of 4,749 m³ (17 percent of inventory) of mixed low-level waste, treat over 2,378 m³ of solid low-level waste and treat and dispose of over 286,000 m³ of low-level and nonradioactive wastewater, and manage the safe storage of 2,539 m³ of transuranic waste (FY 2000).

Complete fabrication and testing of uranium conversion equipment at the Molten Salt Reactor Experiment at the Oak Ridge Reservation and complete planning, design, and documentation for the fuel salt removal process, which will lead to the removal and conversion of uranium in FY 2001, meeting a commitment to the Defense Nuclear Facility Safety Board under recommendation 94-1 (FY 2000).

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
HQNP-SI01-LT-OR / Security Investigations . . .	0	661	563	-98	-14.8%
OR-38109 / Hazardous Waste Management . . .	5,337	4,602	5,506	904	19.6%
OR-38110 / Sanitary/Industrial Waste Management	5,681	4,799	7,026	2,227	46.4%
OR-38111 / Mixed Low-Level Waste Management	100,375	66,311	73,706	7,395	11.2%
OR-38112 / Low-Level Waste Management . . .	32,643	26,741	31,821	5,080	19.0%
OR-38113 / Transuranic Waste Management . .	12,746	17,824	13,766	-4,058	-22.8%
OR-42101 / Y-12 East Fork Poplar Creek Remedial Action	18,635	4,757	6,886	2,129	44.8%
OR-42102 / Y-12 Bear Creek Remedial Action	3,975	7,988	8,210	222	2.8%
OR-43101 / ORNL Melton Valley Watershed D&D - Defense	6,623	0	24,307	24,307	>999.9%
OR-43102 / ORNL Melton Valley Watershed Remedial Action - Defense	464	0	1,300	1,300	>999.9%
OR-43103 / ORNL Bethel Valley Remedial Action - Defense	833	0	28,569	28,569	>999.9%
OR-43104 / ORNL Bethel Valley D&D - Defense	0	0	3,629	3,629	>999.9%
OR-44103 / ETP D&D - Defense	1,513	2,686	7,380	4,694	174.8%
OR-44105 / ETP Landlord - Defense	6,432	24,721	24,681	-40	-0.2%
OR-48103 / Off-site RA - Defense	26,468	9,168	15,409	6,241	68.1%
OR-48104 / Directed Support - Defense	398	2,898	4,162	1,264	43.6%
OR-63101 / NMFS - Defense	2,702	3,600	7,640	4,040	112.2%
Total, Oak Ridge	224,825	176,756	264,561	87,805	49.7%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Oak Ridge Reservation	190,039	164,029	186,622	22,593	13.8%
Oak Ridge National Laboratory	7,920	0	57,805	57,805	>999.9%
Off-Site	26,468	9,168	15,409	6,241	68.1%
Oak Ridge Operations Office	398	3,559	4,725	1,166	32.8%
Total, Oak Ridge	224,825	176,756	264,561	87,805	49.7%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Site			
Assessments	23.0	1.0	10.0
Cleanups	7.0	10.0	0.0
Facility Decommissioning			
Assessments	0.0	0.0	2.0
Cleanups	1.0	0.0	0.0
Transuranic Waste			
Storage (m ³)	2,343.0	2,384.0	2,539.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	0.0	0.0	0.0
Mixed Low-Level Waste			
Treatment (m ³)	2,763.0	4,080.0	1,949.0
Storage - Total (m ³)	24,964.0	11,395.0	7,480.0
DOE On-site/Commercial Disposal (m ³)	1,914.0	4,834.0	4,749.0
Low-Level Waste			
Treatment (m ³)	3,358.0	2,212.0	2,378.0
Storage (m ³)	40,667.0	46,324.0	49,004.0
New Waste (m ³)	0.0	0.0	0.0
Ship DOE Disposal Site (m ³)	0.0	803.0	3,436.0
Disposal - On-site/Commercial Disposal (m ³)	1,278.0	1,167.0	1,345.0
Hazardous Waste			
Disposal - On-site/Commercial (MT)	0.0	150.0	150.0
Spent Nuclear Fuel*			
*Refer to the Non-Defense Environmental Management Appropriation.			

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 are now 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 the East Tennessee Technology Park and the Toxic Substances Control Act incinerator is operating on the East Tennessee Technology Park.

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 from past DOE programs and many facilities were supported by multiple 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, mixed low-level, hazardous and sanitary, and industrial waste are managed at the three Oak Ridge Reservation facilities. Although the operations are different the waste generated from these operations is essentially the same.

Due to past efforts conducted, funding for annual assessment/cleanup has been split between two appropriation accounts and in FY 2000 the majority of support will be funded under the Defense Environmental Restoration and Waste Management Appropriation.

Y-12

The Y-12 site is approximately 811 acres and is located about two miles southwest of Oak Ridge, Tennessee. The Y-12 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 the Defense Programs. The sanitary landfills for all of the Oak Ridge sites operate at Y-12.

Off-site

The Off-Site Program is not 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 Site. All waste types are stored, treated, and disposed in compliance with regulations.

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 1998	FY 1999	FY 2000
---------	---------	---------

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. The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the site, except for the low-level waste management operations, as outlined in the “Accelerating Cleanup: Paths to Closure.” The projects included in this section of the budget have had an independent cost review of the scope, and the funds requested for FY 2000 are appropriate to perform the activities based on awarded fixed-price contracts.

HQNP-SI01-LT-OR / Security Investigations

Funding will be used to perform new security investigations and re-investigations for non-Federal employees in accordance with DOE Order requirements for the Oak Ridge ETTP site.

HQNP-SI01-LT-OR	0	661	563
-----------------------	---	-----	-----

Metrics

No quantifiable corporate performance measures are associated with this project

OR-38109 / Hazardous Waste Management

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

This project, a key activity in the base program required by the Resource Conservation and Recovery Act Regulations, is to effectively manage the Oak Ridge Hazardous Waste Program. The three Oak Ridge sites generate about 150 metric tons of hazardous waste. This waste is disposed of commercially, as generated, in accordance with state regulations. There is no legacy hazardous waste. These activities are essential for the successful execution of the ongoing Defense Programs and Science Office missions.

Treat and dispose of 150 metric tons hazardous waste, as generated.

OR-38109 5,337 4,602 5,506

Metrics			
Hazardous Waste			
Commercial Waste (MT)	0.0	150.0	150.0

OR-38110 / Sanitary/Industrial Waste

This project, a key activity in the base program required by state regulations, is to effectively manage the Oak Ridge Sanitary/Industrial Waste Program. The three Oak Ridge sites annually generate about 68,000 m³ of sanitary and industrial waste. This waste is disposed as generated in the on-site Y-12 sanitary landfills in accordance with state regulations. There is no legacy sanitary/industrial waste. These activities are essential for the successful execution of the ongoing Defense Programs and Science Office missions.

Dispose of 68,000 m³ of sanitary and industrial waste in the on-site landfills.

Close Area IV of the landfill on the Y-12 site.

OR-38110 5,681 4,799 7,026

Metrics			
No quantifiable GPRA metrics are associated with the PBS.			

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-38111 / Mixed Low-Level Waste Management

This project is to perform all necessary activities to compliantly store, treat, and dispose of mixed low-level waste generated from three Oak Ridge sites (Oak Ridge National Laboratory, the Y-12 Plant, and the East Tennessee Technical Park) in accordance with the Oak Ridge Federal Facilities Compliance Act Site Treatment Plan and a Federal Facilities Compliance Agreement. The Toxic Substances Control Act incinerator annually treats about 1,000 m³ of mixed waste. The commercial Broad Spectrum mixed waste contracts started treatment of up to 36,500,000 kg of legacy mixed waste from across the Department of Energy Complex in FY 1999. Treatment and disposal of Oak Ridge legacy mixed waste is expected to be completed by FY 2008. These activities are essential for the successful execution of the ongoing Defense Programs and Science Office missions.

Treat 1,949 m³ (8 percent of the total inventory) and dispose of 4,749 (18 percent) m³.

OR-38111 100,375 66,311 73,706

Metrics			
Mixed Low-Level Waste			
Treatment (m ³)	2,763.0	4,080.0	1,949.0
Storage (m ³)	24,964.0	11,395.0	7,480.0
On-site/Commercial Disposal (m ³)	1,914.0	4,834.0	4,749.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-38112 / Low-Level Waste Management

Perform all necessary operational activities to compliantly store, treat, and dispose of solid low-level waste generated on the three Oak Ridge sites (Oak Ridge National Laboratory, the Y-12 Plant, and the East Tennessee Technology Park). These activities are essential for on-going Defense and Science Office missions.

- # 2,378 m³ of solid low-level waste will be treated.
- # 286,000 m³ of liquid low-level waste and 510,000 m³ of nonradiological wastewater will be treated and disposed as generated.
- # Dispose of 4,781 m³ of solid low-level waste.
- # Provide compliant operation of the Gaseous Waste Collection and Treatment System at the Oak Ridge National Laboratory.
- # Process depleted uranium chips as generated on the Y-12 Plant.

OR-38112	32,643	26,741	31,821
----------------	--------	--------	--------

Metrics			
Low-Level Waste			
Treatment (m ³)	3,358.0	2,212.0	2,378.0
Storage (m ³)	40,667.0	46,324.0	49,004.0
Ship to DOE Disposal Site (m ³)	0.0	803.0	3,436.0
On-site/Commercial (m ³)	1,278.0	1,167.0	1,345.0

OR-38113 / Transuranic Waste Management

Perform all necessary activities to compliantly store and collect the Oak Ridge National Laboratory transuranic waste. These activities are essential for on going Science program mission. These activities are also required by the 49 Code of Federal Regulations, Department of Transportation regulations, Resource Conservation and Recovery Act, Toxic Substance Control Act, and to support the privatization contract. In FY 1998, awarded the privatization contract to treat and prepare transuranic waste for disposal in the Waste Isolation Pilot Plant by FY 2006.

- # Complete site utilities project to support the privatization contract.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Phase I of the privatization contract will be completed including treatment facility design, obtain all necessary licenses and permits, and submit all the National Environmental Policy Act analysis data.

OR-38113 12,746 17,824 13,766

Metrics			
Transuranic Waste			
Storage (m3)	2,343.0	2,384.0	2,539.0

OR-42101 / Y-12 East Fork Poplar Creek Remedial Action

Conduct assessment, cleanup, and pre-decommissioning, surveillance and maintenance activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for mercury release, Dense Non-Aqueous Phase Liquids and other activities under the Comprehensive Environmental Response, Compensation, and Liability Act.

The Upper East Fork Poplar Creek Record of Decision will be issued for approval.

The Upper East Fork Poplar East End Dense Non-Aqueous Phase Liquid project construction and implementation will continue.

Continue surveillance and monitoring support for decommissioning and remedial action sites.

Continue support for Reduction of Mercury in Plant Effluents Program and Integrated Water Quality Program.

OR-42101 18,635 4,757 6,886

Metrics			
Remedial Action/Release Sites			
Assessments	1.0	1.0	10.0
Cleanups	4.0	2.0	0.0
Facility Decommissioning			
Assessments	0.0	0.0	2.0
Cleanups	1.0	0.0	0.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-42102 / Y-12 Bear Creek Remedial Action

Conduct remedial action assessments and cleanup activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for uranium burial grounds and ground water and surface water release, as well as other activities under the Comprehensive Environmental Response, Compensation, and Liability Act.

- # Receive approval on the Bear Creek Valley Watershed Remedial Design Work Plan.
- # Initiate remediation of the Boneyard/Burnyard.
- # Continue management and integration support of construction of the Environmental Waste Management facility (the Oak Ridge On-site Comprehensive Environmental Response, Compensation, and Liability Act disposal cell) for high volumes of low-level radioactive waste.

OR-42102	3,975	7,988	8,210
----------------	-------	-------	-------

Metrics			
Remedial Action/Release Sites			
Assessments	22.0	0.0	0.0
Cleanups	3.0	8.0	0.0

OR-43101 / ORNL Melton Valley Watershed D&D - Defense

Conduct facility decommissioning activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for activities under the Comprehensive Environmental Response, Compensation, and Liability Act. This activity was funded in the Non-Defense Environmental Management Appropriation in FY 1999 at a level of \$33,434,000.

- # Continue operation of the reactive gas removal system to prevent gas buildup and maintain sub-atmospheric pressure in the Molten Salt Reactor Experiment off-gas system.
- # Install and test the Molten Salt Reactor Experiment fuel salt removal system.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Complete treatment of the Molten Salt Reactor Experiment uranium from the reactive gas removal project and the deposit removal project using the new conversion system.

Submit the final Removal Action Work Plan for the Old Hydro Fracture Facility Comprehensive Environmental Response, Compensation, and Liability Act removal action. Complete design and implement decontamination and decommissioning.

Continue the Old Hydrofracture Pond/Tanks Remediation removal action implementation activities.

OR-43101	6,623	0	24,307
----------------	-------	---	--------

<p>Metrics Metrics for FY 1998 - FY 2000 are reflected in PBS OR-43201 (Non-Defense Environmental Management Appropriation).</p>

OR-43102 / ORNL Melton Valley Watershed Remedial Action - Defense

Monitor and conduct remedial action cleanup activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for activities under the Comprehensive Environmental Response, Compensation, and Liability Act. This activity was funded in the Non-Defense Environmental Management Appropriation at a level of \$2,573,000.

Coordinate the integrated water quality program for the Melton Valley Watershed.

OR-43102	464	0	1,300
----------------	-----	---	-------

<p>Metrics Metrics for FY 1998 - FY 2000 are reflected in PBS OR-43202 (Non-Defense Environmental Management Appropriation).</p>

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-43103 / ORNL Bethel Valley Remedial Action - Defense

Conduct remedial action assessments and cleanup and long-term surveillance and maintenance. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for activities under the Comprehensive Environmental Response, Compensation, and Liability Act. This activity was funded in the Non-Defense Environmental Management Appropriation in FY 1999 at a level of \$18,473,000.

- # Continue the sludge removal and transfer activities at the Gunitite and Associated Tanks South Tank Farm.
- # Continue the remediation of the radioactive waste tanks for the Oak Ridge National Laboratory Main Plant Inactive Tank Sub-Project.
- # Complete the Plume Source Removal Action at the Corehole 8.
- # Continue remedial action implementation of the Oak Ridge National Laboratory Main Plant Surface Impoundments. Contaminated sediments will be removed from the impoundments and prepared for disposal.
- # Complete the Bethel Valley Watershed Record of Decision.

OR-43103 833 0 28,569

Metrics Metrics for FY 1998 - FY 2000 are reflected in PBS OR-43203 (Non-Defense Environmental Management).
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

OR-43104 / ORNL Bethel Valley D&D - Defense

Conduct facility decommissioning cleanups and pre-decommissioning surveillance and maintenance activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for activities under the Comprehensive Environmental Response, Compensation, and Liability Act. This activity has been funded in the Non-Defense Environmental Management Appropriation in FY 1998 and FY 1999 at \$4,302,000 and \$5,197,000, respectively).

Initiate the decontamination and decommissioning of the Fission Project Pilot Plant.

Continue routine surveillance and maintenance activities for surplus facilities at the Oak Ridge National Laboratory.

OR-43104	0	0	3,629
----------------	---	---	-------

<p>Metrics Metrics for FY 1998 - FY 2000 are reflected in PBS OR-43204 (Non-Defense Environmental Management).</p>

OR-44103 / ETTP D&D - Defense

Conduct pre-decommissioning surveillance and maintenance activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal regulations and DOE Orders for Health and Safety.

Activities include routine pre-decommissioning surveillance and monitoring of the centrifuge facilities, which includes facility surveillance of major shutdown facilities to identify unacceptable environmental, safety, and health conditions and maintain utility systems; correction of hazardous material leaks, fire protection systems, and facility security, and management of hazardous materials.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Activities also include deactivation work in the centrifuge facilities. (The carryover facilities were not extensively used to enrich uranium for commercial utilities and have therefore been funded through the Defense Appropriation related to uranium enrichment privatization).

OR-44103	1,513	2,686	7,380
----------------	-------	-------	-------

Metrics
 Metrics for FY 1998 - FY 2000 are reflected in PBS OR-44303 (Uranium Enrichment D&D Fund).

OR-44105 / ETTP Landlord - Defense

Conduct Landlord activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal regulations and DOE Orders for Health and Safety, and maintenance. This account also includes infrastructure support activities that had been funded through overhead accounts prior to FY 1999. This activity is split funded by the Defense Environmental Restoration and Waste Management and the Uranium Enrichment D&D Fund Appropriations (total funding \$41,136,000).

- # Related subtasks will be completed for the East Tennessee Technology Park infrastructure used to support Environmental Management Program activities including: the East Tennessee Technology Park Electrical Distribution System Reconfiguration and selected bridge refurbishment.
- # Design, construction, and planning associated with roof replacements and heating, ventilation, and air conditioning upgrades.
- # Issues associated with engineering evaluations for security, classification, piping supports, and other equipment support.
- # Funds infrastructure activities including safeguards and security, utilities, Environment, Safety and Health Program, reindustrialization support, and fire protection.

OR-44105	6,432	24,721	24,681
----------------	-------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project</p>

OR-48103 / Off-site Remedial Action - Defense

Conduct cleanups, ground water remediation and provide technical support and conduct landlord activities. These activities are conducted in accordance with the current project baseline for scope, schedule and cost, and are consistent with the Federal regulations and DOE Orders for Health and Safety, and maintenance. The activities are consistent with the Federal Facilities Agreement milestones as agreed with the Environmental Protection Agency for activities under the Comprehensive Environmental Response, Compensation, and Liability Act, and consistent with the milestones agreed with the State under the Tennessee Superfund Act. This activity is split funded with the Non-Defense Environmental Management Appropriation (total funding \$15,809,000).

- # Continue work on the David Witherspoon Site 901 and 1630 sites and on the Atomic City Auto Parts Site.
- # Conduct subcontract closeout and work-force transition activities.
- # Conduct public affairs activities including support of the Site Specific Advisory Board.

OR-48103	26,468	9,168	15,409
----------------	--------	-------	--------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

OR-48104 / Directed Support - Defense

Additional directed support provides grants to the States of Tennessee and Kentucky through Agreements-in-Principles, formation of site specific advisory boards and through existing Federal Facility Agreements.

- # Provide funding for grants to the State of Tennessee through Agreements-in-Principle and Federal Facility Agreements.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Provide funding for the National Metal Recycle Center.

Provide funding for other directed activities.

OR-48104	398	2,898	4,162
----------------	-----	-------	-------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project</p>

OR-63101 / NMFS - Defense

The nuclear materials facility stabilization activities provides for the safe storage, packaging, and shipment of Spent Nuclear Fuel located at the Solid Waste Storage Area on the Oak Ridge Reservation. The Spent Nuclear Fuel inventory consists of .09 metric tons of heavy metal (MTHM) in aluminum-clad fuel to be shipped to the Savannah River Site by FY 1998 and .16 metric tons of heavy metal in stainless steel, zirconium, and graphite-clad spent nuclear fuel to be shipped to the Idaho National Engineering and Environmental Laboratory by FY 2003. In FY 2000, the requested level of funding will allow the planned project scope and schedule for the spent nuclear fuel program to be maintained and will resolve the Defense Nuclear Facilities Safety Board spent nuclear fuel storage vulnerability. The funding level being requested is appropriate for these activities based on the current baseline. This project is split funded with the Non-Defense Environmental Management Appropriation (total funding \$9,937,000).

Will retrieve and repackage the remaining 16 canisters of spent fuel for shipment to the Idaho National Engineering and Environmental Laboratory.

Will install the remaining 12 liners in the 7827 facility completing the Defense Nuclear Facilities Safety Board vulnerability resolution.

Continue deactivation and surveillance and maintenance activities for the isotope facilities previously funded under the Non-Defense Environmental Management Appropriation.

OR-63101	2,702	3,600	7,640
----------------	-------	-------	-------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

<p>Metrics</p> <p>Metrics for FY 1998-FY 2000 are reflected in PBS OR-63201 (Non-Defense Environmental Management).</p>

Total, Oak Ridge	224,825	176,756	264,561
------------------------	---------	---------	---------

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

HQNP-SI01-LT-OR / Security Investigations

Decrease in the estimated number of investigations to be processed. -98

OR-38109 / Hazardous Waste Management

The increase is due to expected hazardous waste generation increases from the Defense Programs and Science Offices, and increased waste generation activity in decontamination and decommissioning at the East Tennessee Technology Park. 904

OR-38110 / Sanitary/Industrial Waste Management

The increase is due to closure of Area IV and opening of a new cell of the landfill at the Y-12 Plant site. 2,227

OR-38111 / Mixed Low-Level Waste Management

The increase is due to the Broad Spectrum Treatment contracts becoming fully operational; and an increase in other new waste streams treatment; and increases in disposal operations. 7,395

OR-38112 / Low-Level Waste Management

The increase is due to additional treatment and disposal of legacy waste. The increase also reflects restoration of the low-level waste base program activities that were significantly reduced in FY 1999. 5,080

FY 2000 vs. FY 1999 (\$000)

OR-38113 / Transuranic Waste Management

The decrease is due to the completion of the transuranic sludge transfer and road project in FY 1999, which supports the transuranic privatization contract. The decrease also reflects reduced FY 2000 Phase I privatization project funding requirements. -4,058

OR-42101 / Y-12 East Fork Poplar Creek Remedial Action

The increase is due to record of decision approval; increased surveillance and maintenance and the Dense Non-Aqueous Phase Liquid project construction and implementation. 2,129

OR-42102 / Y-12 Bear Creek Remedial Action

No significant change. 222

OR-43101 / ORNL Melton Valley Watershed D&D - Defense

This project is a net decrease (defense and non-defense). Less work has been planned for this project in FY 2000 in order to direct funding to compliance activities. In FY 1999 these activities are in the Non-Defense Environmental Management Appropriation at a level of \$33,434,000. 24,307

OR-43102 / ORNL Melton Valley Watershed Remedial Action - Defense

This project is a net decrease (defense and non-defense). Slightly less work has been planned for this project in FY 2000. In FY 1999 these activities are in the Non-Defense Environmental Management Appropriation at a level of \$2,573,000. 1,300

OR-43103 / ORNL Bethel Valley Remedial Action - Defense

This project is a net increase (defense and non-defense). Increased work includes sludge removal and transfer activities; remediated of the radioactive waste tanks for main plan inactive tank; and to complete plume source removal action at the Corehole 8. In FY 1999 these activities are in the Non-Defense Environmental Management Appropriation at a level of \$18,473,000. 28,569

OR-43104 / ORNL Bethel Valley D&D - Defense

This project is a net decrease (defense and non-defense). Less work has been planned for this project in FY 2000. In FY 1999 these activities are in the Non-Defense Environmental Management Appropriation at a level of \$5,197,000. 3,629

FY 2000 vs. FY 1999 (\$000)

OR-44103 / ETTP D&D - Defense

The increase is in scope of deactivation work at the Centrifuge Facility. 4,694

OR-44105 / ETTP Landlord - Defense

No significant change. -40

OR-48103 / Off-site Remedial Action - Defense

The increase is due to the majority of activities being transferred to the Defense Environmental Restoration and Waste Management Appropriation in FY 2000; and additional contract transition activities.. . . . 6,241

OR-48104 / Directed Support - Defense

The increase is due to increased Agreements-in-Principle and other directed activities and to provide funding for the National Center of Excellence for Metal Recycling. 1,264

OR-63101 / NMFS - Defense

This increase is due to the final installation of the remaining new liners in the 7827 facility, which will complete the resolution of the spent fuel vulnerability identified by the Defense Nuclear Facilities Safety Board. Increase also reflects the majority of activities being transferred to the Defense Environmental Restoration and Waste Management Appropriation in FY 2000. 4,040

Total Funding Change, Oak Ridge 87,805

Richland

Mission Supporting Goals and Objectives

Mission

The Mission of the Hanford site, managed by the Richland Operations Office, is to protect the health and safety of the public, workers, and the environment; control hazardous materials; and utilize the assets (people, infrastructure, and site) for others missions. Under the Defense Environmental Management, Post 2006 Completion account, the site manages surface land and water, the Vadose Zone, groundwater, facilities, property and special nuclear materials inventories, for the purpose of cleaning up the contaminated material and preventing further contamination from reaching the Columbia River. The major site efforts included in this part of the budget are: the Tank Waste Remediation System project in the central plateau (200 Area) of the site; Environmental Restoration, including the decontamination and decommissioning of reactors and facilities in the 100 Area along the Columbia River, and the cleanup of the contaminated soil and water throughout the site; Waste Management activities which are primarily carried out in the 200 and 300 Areas of the site; management of the on site Analytical Laboratories and of Pacific Northwest National Laboratory, which provide services to the various cleanup efforts onsite; and the Landlord program, which maintains the site infrastructure, vital to the cleanup effort. The Hanford site is the nation's largest former nuclear weapons production site, and the Hanford cleanup project is the largest, most technically complex, environmental cleanup project yet undertaken.

Program Goal

The ultimate program goal for the Hanford site is to protect the Columbia River. There are several major efforts required to accomplish this goal. These efforts include: removal and treatment of waste now stored in 177 underground high level waste tanks; cleanup and safe disposal in the central area of the site of surface contamination along the Columbia River; monitoring, mitigation, and remediation of chemical and radioactive contaminants that have migrated into the vadose zone and groundwater beneath the site; management of large volumes of liquid and solid wastes generated as a result of site cleanup; and management of the site infrastructure for the duration of the cleanup, which will go on for many years. 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, the State of Washington and the Environmental Protection Agency.

Many interim activities are being conducted to resolve the most urgent risks at the Hanford site. By 2006, Hanford plans to have all essential site infrastructure completed to support the privatization contractor's treatment facilities, upgrade tank retrieval systems, complete necessary upgrades of tank infrastructure and transfer lines, have storage facilities available for receipt of immobilized waste, and be prepared to deliver wastes to support hot operations of the privatized facilities. In succeeding years, Hanford will provide interim storage of the immobilized wastes treated by the privatization contractor. By 2018, approximately 10 percent of the wastes, involving about 25 percent of the highest risk wastes, will be treated and safely stored. Thereafter, the site will proceed with the second phase of the privatization effort.

Hanford also has a goal of cleaning up the contaminated soil and buildings to levels supportive of future use targets and/or to regulator specified levels as prescribed by the Comprehensive Environmental Response, Compensation, and Liability Act/Resource Conservation and Recovery Act decisions. Hanford intends to aggressively clean up the contaminated soil and buildings in the 100 and 300 Areas and dispose of remediation waste in the on site Environmental Restoration Disposal Facility. Hanford currently has 1,629 release sites awaiting remediation and 692 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.

In addition, Hanford will dispose solid wastes consistent with national policies for management of transuranic, low-level, low-level mixed, and hazardous wastes. Hanford will continue to receive onsite and off-site wastes for disposal in the 200 Area. Retrieved transuranic waste will be processed and shipped off-site to the Waste Isolation Pilot Plant.

Program Objectives

The near term program objective for the high-level waste tank farms is to perform interim stabilization of the remaining 29 single shell tanks by pumping their contents to safer, newer double shell tanks. Also, Hanford will close unreviewed safety questions, work toward closure of the waste level rise in tank SY-101, and complete the sluicing campaign in tank 106-C, resolving safety concerns with that tank.

The site will continue decontamination and decommissioning of surplus facilities including interim safe storage and final disposition of the 100 Area reactors. Contaminated material will continue to be excavated and disposed in the Environmental Restoration Disposal Facility. Cells 1 and 2 will be interim closed pending final closure of the Environmental Restoration Disposal Facility. The site will implement a science and technology roadmap for the Groundwater/Vadose Zone Integration program to support site assessment and remediation and system assessment capability development.

Hanford will continue processing transuranic and low-level mixed waste through the Waste Receiving and Processing facility and be ready to ship transuranic waste to the Waste Isolation Pilot Plant. Hanford will also continue to dispose of low-level mixed and low-level wastes, including low-level waste received from offsite generators. Site support will continue to be provided including maintenance, upgrades, and replacement of the general purpose infrastructure required throughout the Hanford site.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by Site table; as well as, at a project level in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Completed seven waste site remediations in the Hanford 100 Area in 1998 with 258,000 m³ (534,000 tons) of soil removed, and in FY 1999, 29 more waste site remediation completions are scheduled with 171,225 m³ (365,000 tons) of soil removed, thereby reducing risk of mixed low-level contamination from reaching the Columbia River and meeting the Tri-Party Agreement commitments. In FY 2000, 14 waste site remediations are scheduled, with 126,169 m³ (277,766 tons) of soil removed, in addition to the completion of backfill of ten waste sites.
- # Completed barrier testing in the Hanford 200 Area in FY 1998. In FY 1999, the 200 Area implementation plan will be completed thereby meeting the Tri-Party Agreement commitments.
- # Completed two waste remediations in the Hanford 300 Area with 53,917 m³ (117,000 tons) of soil removed (FY 1998), and is scheduled to complete three more waste site remediations with 78,107 m³ (162,895 tons) of soil removed in FY 1999, thereby reducing risk of mixed low-level contamination from reaching the Columbia River and meeting the commitments of the Tri-Party Agreement. In FY 2000, plan two waste site completions with 12,083 m³ (24,600 tons) of soil to be sent to the Environmental Restoration Disposal Facility.
- # The Environmental Restoration Disposal Facility received 308,295 m³ (669,000 tons) of contaminated soils and debris resulting from site remediation and began the facility expansion with Cells 3 and 4 (FY 1998) and is scheduled to receive 254,859 m³ (541,000 tons) of contaminated soil and debris and complete the expansion of Cells 3 and 4 (FY 1999), thereby safely storing the environmental restoration waste and meeting the commitments Tri-Party Agreement. In FY 2000, the interim closure of Cells 1 and 2 will be complete, and 142,181 m³ (314,400 tons) of soil will be disposed of.
- # The Facility Surveillance and Maintenance project completed stabilization of seven radioactive waste area sites preventing spread of contaminants, completed three corrective actions to specific facilities in 100 Area Risk Assessment corrective actions (FY 1998), and is scheduled to complete the stabilization of five waste sites, preventing spread of contaminants (FY 1999), thereby reducing environmental risk. In FY 2000, this project will continue surveillance and maintenance of surplus facilities and reactors as well as continuing the Canyon Disposal Initiative.

- # The Hanford decontamination and decommissioning project completed the interim safe storage of 105-C Reactor and initiated the interim safe storage of 105-F and 105-DR Reactors (FY 1998) and is scheduled to continue the interim safe storage of 105-F and 105-DR Reactors (FY 1999), thereby reducing mortgage, reducing environmental risk, protecting the Columbia River, and meeting the commitments of the Tri-Party Agreement. In FY 2000, the project will continue decontamination and decommissioning of 233-S building, continue interim safe storage of 105-F and 105-DR reactors, and begin characterization of 224B facility.
- # The ground water project continued operations of five pump and treat systems to reduce contamination and contain flow of plumes, and continued operation of the carbon tetrachloride vapor extraction system (FY 1998/FY 1999), thereby reducing the risk of low-level contamination from reaching the Columbia River, and meeting the commitments of the Tri-Party Agreement.
- # The Hanford Site Groundwater/Vadose Zone Integration Project was established in FY 1998. This science-based project includes participation of the DOE national laboratories and incorporates peer review. Through 1998 the project has developed a Science and Technology Roadmap in cooperation with the Department of Energy national laboratories; established a nationally recognized Expert Review Panel; initiated, with the direct participation of stakeholders, definition of an assessment tool to address the impact of all Hanford Site wastes; and issued the draft project specification and long-range plan. In FY 2000, implementation of the science and technology roadmap to support site assessment and remediation and system assessment capability development will commence.
- # Completed 16 Tank Characterization Reports and met all the Defense Nuclear Facilities Safety Board 93-5 commitments (FY 1998).
- # Complete all Tank Characterization Reports required by the Tri-Party Agreement commitments and close the Defense Nuclear Facilities Safety Board Recommendation 93-5 (FY 1999).
- # Closed organic complexant unresolved safety question for all tanks; resolved organic complexant safety issue; closed flammable gas unreviewed safety question for double-shell tanks and single-shell tanks; and provide annual update to Basis for Interim Operations of the Tank Farms (FY 1998).
- # Resolve organic solvent safety issue; resolve high-heat safety issue; and resolve criticality safety issue (FY 1999).
- # Complete negotiation of a Consent Decree for tank interim stabilization with the State of Washington. This resolves the announced lawsuit (FY 1999).
- # Issued regulatory guidance, completed review and approval of the Phase I-A submittals, and did a readiness-to-proceed (to Phase I-B) evaluation of both privatization contractors, evaluated vendors' conceptual design and issued decision to proceed to Part B, Phase I of the privatization contract; prepared the Privatization Authorization-to-Proceed package and documentation for Congressional Report to proceed with Phase I Privatization (FY 1998).
- # The planned schedule of activities by the privatization contractor, BNFL, Inc., for treatment and immobilization of tank wastes has changed since the FY 1999 Congressional Budget Request. Accordingly, activities supporting privatization have being re-prioritized (PROGRAM SHIFT).

- # Prepared documentation to support AP106/108 tank turnover to a privatization contractor, and issued Phase I Site Characterization Data Report (FY 1998).
- # Submitted Project Management Plan for Immobilized Tank Waste Storage and Disposal Project to Washington State Department of Ecology (Tri-Party Agreement M-90-01); validated Immobilized Low Activity Waste project for grout vault modification; and initiated conceptual design for additional disposal capacity (needed when grout vaults reach capacity) (FY 1998).
- # The Tank Waste Remediation System issued annual update on the Multi-Year Work Plan; completed the Tank Waste Remediation System technical baseline to support project design requirements; and issued draft Management Support Project transition plan (FY 1998).
- # Complete demonstrations in preparation for delivery to the privatization contractor; additional vadose zone characterization will allow further definition of tank retrieval and closure requirements (FY 1999).
- # Complete documentation for tank and land turnover to Phase I Privatization Contractor, finalize planning for construction of roads and decommissioning of a monitoring well that interferes with the Privatization Contractor's facility (FY 1999).
- # Complete Immobilized Low Activity Waste Disposal Facility conceptual design and validate project for additional disposal capacity; establish processing parameters for incorporation of the vitrification of Cs/Sr capsule contents into Phase II Privatization scope; revalidate Immobilized High-Level Waste Storage project (FY 1999).
- # Completed Replacement Cross-Site Transfer System (93-D-182), securing a compliant, double-contained cross-site transfer line meeting the Tri-Party Agreement milestones (FY 1998).
- # Completed Tank Farm Ventilation Upgrade (89-D-173), and placed AY/AZ Tank Farm ventilation systems in service, meeting the Tri-Party Agreement milestones (FY 1998).
- # Established and started implementation of planned interim stabilization of remaining 29 single shell tanks containing free liquids. Started pumping three tanks and completed pumping another; agreed to milestones with the State of Washington (FY 1998) resolving potential lawsuit.
- # Completed expense funded construction of a project for sluicing tank C-106 and commence sluicing to remove high heat sludge.
- # Initiated off-site shipment of mixed low-level waste to Idaho for thermal treatment (FY 1998).
- # Completed shut-down of the Hanford railroad and transferred the 1100 area to the Port of Benton (FY 1998).
- # Started operations of the Waste Receiving and Processing transuranic waste processing line (FY 1998), and have prepared about 20 m³ of non-mixed transuranic waste ready for shipment to the Waste Isolation Pilot Plant for disposal (FY 1999).
- # Provided 23,500 student days of Hanford safety and health training and conducted two large scale emergency response field exercises in the United States by leveraging other organization's training (FY 1998), and is scheduled to provide 24,000 more student days of Hanford training (FY 1999).

- # Declassified 103,545 pages of documents after reviewing 209,866 pages and completed Nature Conservancy activities, (FY 1998); and scheduled to review 240,000 pages in FY 1999. Also in FY 1999, the program is scheduled to complete the Westinghouse Hanford contract closeout.
- # The Landlord project deactivated three facilities, decommissioned twenty-two facilities, and monitored thirty-eight deactivated and ten active facilities. Two construction projects were completed: Water System Upgrade Reservoir (general plant funded) and 324 Facility Compliance/Renovation (95-D-454). Shut down two central steam plants, which reduced soil and air pollution by six hundred tons per year and reduced liquid effluent discharged to the ground by 57 million gallons (FY 1998).
- # The Landlord project is scheduled to complete the disposal of four contaminated rail cars, deactivate fifty facilities and monitor forty deactivated and 400 active facilities. The 200-East Area Sanitary Water Effluent and 200-West Area Regional Drainfield projects are scheduled for completion, which will reduce over 12 million gallons of liquid effluent from being discharged to the soil column (FY 1999).
- # The Tank Waste Remediation System issue annual update on the Multi-Year Work Plan; submit Project Baseline Summaries; upgrade Systems Engineering Management Plan; and update and issue final Management Support Project transition plan (FY 1999).

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
HQNP-SI01-LT-RL/Security Investigations	0	791	807	16	2.0%
RL-ER01 / 100 Area Remedial Action	12,074	22,054	26,111	4,057	18.4%
RL-ER02 / 200 Area Remedial Action	1,279	1,967	0	-1,967	-100.0%
RL-ER03 / 300 Area Remedial Action	6,819	7,809	6,296	-1,513	-19.4%
RL-ER04 / Environmental Restoration Disposal Facility	21,383	29,952	16,030	-13,922	-46.5%
RL-ER05 / Facility Surveillance and Maintenance	10,742	13,844	12,278	-1,566	-11.3%
RL-ER06 / Decontamination and Decommissioning	17,675	11,540	10,769	-771	-6.7%
RL-ER07 / Post Closure Surveillance and Maintenance	-10	59	60	1	1.7%
RL-ER08 / Ground Water Management	20,603	19,152	19,394	242	1.3%
RL-ER10 / Program Management and Support	31,302	32,923	32,837	-86	-0.3%
RL-HM01 / HAMMER	4,883	5,800	5,900	100	1.7%
RL-OT01 / Mission Support	22,857	26,180	25,866	-314	-1.2%
RL-OT04 / RL Directed Support	25,595	24,641	16,400	-8,241	-33.4%
RL-RG01 / TWRS Regulatory Unit	4,090	5,039	5,663	624	12.4%
RL-ST01 / PNNL Waste Management	14,851	15,020	13,961	-1,059	-7.1%
RL-TP02 / WESF Sub-Project	13,263	10,900	14,700	3,800	34.9%
RL-TP13 / Landlord Project	13,123	12,599	14,000	1,401	11.1%
RL-TW01 / Tank Waste Characterization	40,987	36,800	26,097	-10,703	-29.1%
RL-TW02 / Tank Safety Issue Resolution Project	28,636	19,900	26,691	6,791	34.1%
RL-TW03 / Tank Farms Operations	112,527	120,823	151,972	31,149	25.8%
RL-TW04 / Retrieval Project	56,917	64,414	55,113	-9,301	-14.4%
RL-TW05 / Process Waste Support	18,158	2,168	10,241	8,073	372.4%
RL-TW08 / Process Waste Privatization Infrastructure	0	18,400	18,914	514	2.8%
RL-TW09 / Immobilized Tank Waste Storage and Disposal Project	10,776	9,200	7,652	-1,548	-16.8%
RL-TW10 / TWRS Management Support	38,087	34,217	38,320	4,103	12.0%
RL-VZ01 / Sitewide Groundwater/Vadose Zone Project	0	6,700	11,325	4,625	69.0%
RL-WM03 / Solid Waste Storage and Disposal	31,551	34,851	36,919	2,068	5.9%
RL-WM04 / Solid Waste Treatment	30,134	22,089	25,359	3,270	14.8%
RL-WM05 / Liquid Effluents Project	30,378	29,359	30,988	1,629	5.5%
RL-WM06 / Analytical Services	28,518	26,801	26,734	-67	-0.3%
Total, Richland	647,198	665,992	687,397	21,405	3.2%

**Environmental Management/Defense
Environmental Restoration and Waste
Management/Post 2006 Completion/Richland**

FY 2000 Congressional Budget

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Hanford	602,662	620,501	651,373	30,872	5.0%
Richland Operations Office	44,536	45,491	36,024	-9,467	-20.8%
Total, Richland	647,198	665,992	687,397	21,405	3.2%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Site			
Assessments	276.0	46.0	417.0
Cleanups	9.0	32.0	16.0
Facilities Deactivation			
Deactivated During Period	3.0	50.0	20.0
Post Deactivation Monitoring	38.0	40.0	39.0
Deactivated - Not Yet	10.0	400.0	375.0
Facilities Decommissioning			
Cleanups	46.0	38.0	23.0
Transuranic Waste			
Storage (m ³)	16,300.0	16,300.00	16,400.00
Treatment	0.0	182.0	390.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	0.0	22.0	131.0
Mixed Low-Level Waste			
Storage (m ³)	9,171.0	10,000.0	8,815.0
Treatment (m ³)	22.0	608.0	500.0
DOE On-site/Commercial (m ³)	0.0	0.0	2,525.0
Low-Level Waste			
Storage (m ³)	180.0	180.0	180.0
Treatment (m ³)	12.0	0.0	0.0
Disposal - DOE On-site/Commercial (m ³)	5,920.0	6,120.0	3,880.0
High-Level Waste			
Storage (m ³)	204,000.0	207,000.0	221,000.0
Hazardous Waste			
Disposal - DOE On-site/Commercial (MT)	186.0	32.7	27.4

Site Description

Richland Operations Office -- Hanford Site

The United States Department of Energy's Richland Operations Office manages the Department's Hanford Site, in Southeastern Washington State. The 1,465 square kilometer (560 square mile) site is bounded on the north by over 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 the US Ecology and the 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 1960s when 9 production reactors were in operation along the river. The last to be decommissioned was 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 200-Area had been the site of major nuclear chemical processing plants which were all shut down by the early 1990s. The 200-Area is now the core of major waste management operations, and includes 177 underground storage tanks containing the high-level waste from past processing operations. A major effort to immobilize these wastes by vitrification is underway by a privatization contractor. The Plutonium Finishing Plant is one of the last production facilities that will remain operational -- to process remaining plutonium materials. Other areas of the site include the Fast Flux Test Facility (400-Area) which does not currently have a mission (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 communities.

The Hanford mission is now site cleanup and environmental restoration, including the groundwater/vadose zone integration project to protect the Columbia River. The cleanup is covered by a 1989 consent agreement between the Department of Energy, the Environmental Protection Agency, and the Washington State Department of Ecology. This Tri-Party Agreement contains enforceable milestones for bringing 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.

Office of River Protection

In order to more effectively manage the Tank Waste Remediation System, 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, Washington, site. The Manager of this Office will be a high level Departmental management official responsible for managing all aspects of the Tank Waste Remediation System, including the privatized contract for treatment and immobilization of tank waste, and the non-privatized operations, maintenance, engineering and construction activities in the tank farms. The Office of River Protection reports directly to the Assistant Secretary of Environmental Management and receives administrative support from the Manager, Richland Operations Office. The Department was further required by Congress to provide an “integrated management plan for all aspects of the Hanford tank farm operations including roles, responsibilities, and reporting relationships.” This plan, entitled “The Office of River Protection Integrated Management Plan for the Hanford Tank Waste Remediation System” has been delivered to the Senate Committee on Armed Services and the House Committees on Commerce and on National Security. The plan describes the Tank Waste Remediation System project and provides details of the roles and responsibilities of key Department officials in executing this project. The Manager of the Office of River Protection will maintain an effective, highly skilled staff to manage the complex Tank Waste Remediation System activities and ensure proper integration of the non-privatized work scope with the needs of the privatization contract to lead to successful immobilization of high-level wastes and the ultimate protection of the Columbia River resources.

Detail Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Site is managed through an incentivized integrated contract, with fixed-price subcontracts, to assure the most cost efficient service to the Government. The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the *Accelerating Cleanup: Paths to Closure*.

Approximately 50 percent of the projects included in this section of the budget, and over 90 percent of the compliance costs, have had an independent cost review of the scope, and the funds requested for FY 2000 are appropriate to perform the activities based on estimated project progress and accumulated cost management success.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

HQNP-SI01-LT-RL/Security Investigations

Funding will be used to perform new security investigations and re-investigations for non-Federal employees in accordance with DOE Order requirements for the Richland Site.

- # Provide for contractor security investigations and re-investigations.

HQNP-SI01-LT-RL	0	791	807
-----------------------	---	-----	-----

Metrics No quantifiable corporate performance measures are associated with this project.

RL-ER01 / 100 Area Remedial Action

This project's mission is to accomplish the remediation of over 400 past practice waste sites, in six separate reactor areas of the Hanford site to release the property for other beneficial use.

- # Backfill 10 completed waste sites at 100 BC Source Area.
- # Remediate 3 waste sites and dispose of 11,481 tons (5,288 m³) of soil at 100 DR Source Area.
- # Remediate 1 waste site and dispose of 124,572 tons (57,406 m³) of soil at 100 FR Source Area.
- # Remediate 10 waste sites and dispose of 132,845 tons (59,390 m³) of soil at 100 HR Source Area.
- # Dispose of other 100 Area Waste: 8,868 tons (4,085 m³).
- # Total waste sent to the on-site Environmental Restoration Disposal Facility is 277,800 tons (128,000 m³).

RL-ER01	12,074	22,054	26,111
---------------	--------	--------	--------

Metrics			
Remedial Action/Release Site			
Assessments	269.0	46.0	0.0
Cleanups	7.0	29.0	14.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-ER02 / 200 Area Remedial Action

This project's mission is to accomplish the remediation of over 700 past practice waste sites, located in the 200 East and 200 West Areas of the Hanford site.

Field characterization activities are deferred until FY 2001.

RL-ER02	1,279	1,967	0
---------------	-------	-------	---

Metrics			
Remedial Action/Release Sites			
Completed Assessments	7.0	0.0	0.0
Completed Cleanups	0.0	0.0	0.0

RL-ER03 / 300 Area Remedial Action

This project's mission is to accomplish the remediation of over 100 past practice waste sites, just north of the city of Richland and adjacent to the Columbia River at the Hanford site to release the property for other beneficial (industrial) use.

Continue closeout activities for 300-FF-1 source area, including two waste site completions. Send 24,600 tons (12,083 m³) of waste to the Environmental Restoration Disposal Facility.

Continue with feasibility studies and proposed plan for the 300-FF-2 source term.

Complete 417 assessments in 300-FF-1 and 300-FF-2 Source Areas.

RL-ER03	6,819	7,809	6,296
---------------	-------	-------	-------

Metrics			
Remedial Action/Release Sites			
Completed Assessments	0.0	0.0	417.0
Completed Cleanups	2.0	3.0	2.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-ER04 / Environmental Restoration Disposal Facility

This project's mission is to provide for the long-term Comprehensive Environmental Response, Compensation, and Liability Act waste disposal needs of the Hanford Environmental Restoration Program. The facility is located in between the 200 East and 200 West Areas.

- # Complete interim closure construction for cells 1 and 2 of the disposal cell.
- # Transport and dispose of over 314,400 tons (142,181 m³) of low-level waste, some of which comes from decontamination and decommissioning, and the bulk from the 100 and 300 Area cleanups.

RL-ER04	21,383	29,952	16,030
-------------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

RL-ER05 / Facility Surveillance and Maintenance

This project's mission is to provide surveillance and maintenance of over 1,200 waste sites and 700 facilities assigned to the Environmental Restoration Project. The sites and facilities are located throughout the Hanford site.

- # Continue surveillance and maintenance of surplus facilities and reactors.
- # Continue stabilization and radiological surveys of waste sites and complete annual herbicide spraying.
- # Continue nuclear facility and facility transition support.
- # Continue Canyon Disposition initiative at minimal funding level.

RL-ER05	10,742	13,844	12,278
-------------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-ER06 / Decontamination and Decommissioning

This project’s mission is to decontaminate and decommission inactive facilities and to provide for interim safe storage and final disposition of the surplus reactors.

- # Continue decontamination and decommissioning of 233-S building.
- # Continue Interim Safe Storage Activities for the 105-DR and 105-F reactors.
- # Begin characterization efforts associated with 224B facility.

RL-ER06	17,675	11,540	10,769
-------------------	--------	--------	--------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

RL-ER07 / Post Closure Surveillance and Maintenance

This project’s mission is to provide long-term surveillance and maintenance of waste sites after the completion of remediation, and of facilities, after decontamination and decommissioning. Post remediation monitoring is required under the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act.

- # Post remediation monitoring per the close out of the 1100 Area National Priority List site.
- # The FY 1998 estimate reflects deobligation and transfer of FY 1998 Budget Authority to other activities. Project was funded using FY 1997 carryover.

RL-ER07	-10	59	60
-------------------	-----	----	----

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-ER08 / Ground Water Management

This project’s mission is the remediation of ground water and the long-term protection of the ground water resources of the Hanford site.

- # Identification and tracking of radiological and hazardous contaminants in the ground water of the entire Hanford site.
- # Perform well monitoring and 100/200 area pump and treat and vapor extraction activities.
- # Support continued sampling, analysis, interpretation, and reporting of ground water condition.

RL-ER08	20,603	19,152	19,394
-------------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

RL-ER10 / Program Management and Support

This project’s mission is to provide programmatic oversight for individual Environmental Restoration Project Areas by ensuring that requisite management systems, project infrastructure and regulatory framework are in place and maintained until project completion.

- # Safety, quality assurance, regulatory compliance, data management systems, engineering, project controls, and public support for the Environmental Restoration project essential services.
- # Comprehensive Environmental Response, Compensation, and Liability Act Grants, site-wide assessments, special studies.

RL-ER10	31,302	32,923	32,837
-------------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-HM01 / HAMMER

This project’s mission is to provide employees of the Department and its contractors with the prerequisite safety and health training required for working on site, as well as the hazardous materials and emergency response training necessary for site operations. Realistic, hands-on props boost student achievement and help to improve clean up efficiency. Training costs are reduced by using advanced training technologies and by training other, non-DOE, organizations.

- # Provide 28,000 student days of safety and health training for site workers.
- # Provide a variety of other training and information services, including: the Hanford Safety and Health Library, Learning Resource Center, distance learning technology, and computer-based training.
- # Provide safety and health degree programs (i.e., industrial hygiene) through distance learning.
- # Increase the use of hands-on props event simulation in training.
- # Evaluate training class.

RL-HM01	4,883	5,800	5,900
---------------	-------	-------	-------

Metrics
 No quantifiable corporate performance measures are associated with this project.

RL-OT01 / Mission Support

This project’s mission is to: operate the fundamental technical and business systems required for keeping the site open and performing clean up work; integrate contractor efforts to eliminate counterproductive or under productive workscope; provide environmental surveillance, including air/surface/liquid effluent monitoring; perform environmental/ecological/cultural management; maintain regulatory and technical baselines; and monitor risks to public safety.

- # Continue the site operations and support services described above.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Regulatory compliance work includes: produce 20 documents for the National Environmental Protection Agency and 10 documents for the Resource Conservation and Recovery Act; produce 35 notices of construction; implement the Radiation and Protection of the Public and the Environmental Law (10 CFR 834); maintain and operate a steel head salmon management plan (Endangered Species Act); document historic site buildings (National Historic Preservation Act); and conducting other regulatory compliance work at the site level.

Business and national program work includes operating and maintaining: an accelerated cleanup plan; integrated priority lists; multi-year work plans; project baseline summaries; and an Integrated Planning, Accountability and Budget reporting/management System.

RL-OT01 22,857 26,180 25,866

Metrics

No quantifiable corporate performance measures are associated with this project.

RL-OT04 / Richland Directed Support

This project's mission is to provide support for contract closure activities, stakeholder activities, and public entitlement and assistance programs.

Review 240,000 pages of documents for declassification.

Continue support for: downwinder litigation, air emissions monitoring, Resource Conservation and Recovery Act mixed waste fee, State of Washington and State of Oregon oversight, emergency preparedness grants, and Hanford Advisory Board and miscellaneous grants and activities.

RL-OT04 25,595 24,641 16,400

Metrics

No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-RG01 / TWRS Regulatory Unit

This project funds the Richland Regulatory Unit that regulates the Tank Waste Regulatory System Privatization Contractor in the areas of nuclear, radiological, and process safety. The Regulatory Unit develops regulatory guidance, and reviews and approves contractor submittals to assure the contractor achieves adequate safety. This project will end if the Nuclear Regulatory Commission assumes regulatory authority. This is not expected to occur before FY 2006.

- # Continue review of safety baseline documentation to enable the vendor (BNFL, Inc.) to proceed into the next stage of design.
- # Issue needed regulatory guidance.
- # Continue oversight and inspection in support of preconstruction activities.

RL-RG01	4,090	5,039	5,663
---------------	-------	-------	-------

Metrics

No quantifiable corporate performance measures are associated with this project.

RL-ST01 / PNNL Waste Management

This project provides the Pacific Northwest National Laboratory with waste management services and compliant operations in support of science and technology development for the multi-program needs.

- # Maintain minimum safe conditions and compliant operations of the Pacific Northwest National Laboratory facilities; create operational drawings for the 325 Building gas, vacuum, and fire sprinkler piping.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Manage the consolidation, packaging, and transportation of currently generated Pacific Northwest National Laboratory wastes (283 m³ of low-level waste; 34 m³ of mixed low-level waste; 7 m³ of transuranic waste; and 50 metric tons of hazardous wastes) for treatment and/or disposal; operate the permitted hazardous waste storage unit, the 90-day storage area, and the new 3,000 gallon Radioactive Liquid Waste Tank; verify compliance of Laboratory facility effluents.

RL-ST01 14,851 15,020 13,961

Metrics

No quantifiable corporate performance measures are associated with this project.

RL-TP02 / WESF Sub-Project

Provides for safe, compliant, and cost effective storage of about 150,000,000 curies of encapsulated radioactive cesium and strontium until it can be treated in the FY 2013 - FY 2017 time period.

- # Provide minimum surveillance and maintenance to maintain the facility safety basis.
- # Initiate the Waste Encapsulation and Storage Facility Safety Analysis Report.
- # Provide new method for non-destructive testing the integrity of 1,900 cesium and strontium capsules in order to identify problem capsules before they fail.
- # Improve leak detection system in capsule storage pool to allow quicker isolation of a capsule in the event a capsule leak occurred.

RL-TP02 13,263 10,900 14,700

Metrics

This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-TP13 / Landlord Project

This project's mission is to maintain, upgrade, replace, construct, purchase, perform surveillance on, deactivate and dispose of general purpose infrastructure and capital equipment throughout the Hanford site to support cleanup.

Continue the support services described above at the minimum levels necessary to maintain safe site operation, which include:

- ▶ Complete 200-West Area Fire Station Renovation;
- ▶ Shutdown abandoned septic systems in the outer areas and at 20 buildings;
- ▶ Dispose of three contaminated rail cars;
- ▶ Mitigate chlorine contamination in the 200 Area infrastructure;
- ▶ Replace 621A Building generator;
- ▶ Refurbish two building exteriors and provide surveillance and maintenance for 375 vacant buildings;
- ▶ Monitor 39 deactivated buildings; and
- ▶ Maintain 60 miles of core site roads to avoid replacement.

Replace two electric utility trucks with manlifts, and replace an ambulance and aerial-ladder fire engine.

RL-TP13	13,123	12,599	14,000
---------------	--------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics	FY 1998	FY 1999	FY 2000
Facility Deactivation			
Buildings Deactivated During Period	3.0	50.0	20.0
Buildings Not Yet Deactivated	10.0	400.0	375.0
Buildings in Post-Deactivation Monitoring	38.0	40.0	39.0
Facility Decommissioning			
Cleanup	46.0	38.0	23.0

RL-TW01 / Tank Waste Characterization

This project's mission is to provide characterization for tank waste safe storage, operations, and retrieval/disposal. Includes analysis and improvements of sampling equipment and methods, and also supports Technology Development needs.

- # Complete all Tank Characterization Reports required by the annually negotiated Waste Information Requirements Document under Tri-Party Agreement-M-44 and revised reports.
- # Provide sample material to BNFL.
- # Provide data management and interpretation support to the Tank Waste Remediation System program.

RL-TW01	40,987	36,800	26,097
---------------	--------	--------	--------

Metrics
No quantifiable corporate performance measures are associated with this project.

RL-TW02 / Tank Safety Issue Resolution Project

This project's mission is to provide an adequate safety basis for the management and storage of waste by the Tank Waste Remediation System; to develop and maintain an integrated authorization basis, and to resolve existing safety issues and associated Unreviewed Safety Questions.

- # Develop operational safety Authorization Basis amendments and work toward closure for the waste level rise Unreviewed Safety Question in Tank 101-SY. Complete the final waste transfer and dilution, which began in FY 1999. Begin second waste transfer and dilution campaign as required.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Complete the annual Authorization Basis update and upgrade for facilities ancillary to the tank farms. Maintain the Unreviewed Safety Question process and manage the licensing process.

Continue with technical work required to resolve the flammable gas safety issue.

RL-TW02	28,636	19,900	26,691
---------------	--------	--------	--------

Metrics No quantifiable corporate performance measures are associated with this project.

RL-TW03 / Tank Farms Operations

This project's mission is to operate, maintain, and upgrade tank farm facilities to safely receive and store waste until it is retrieved; operate the single-shell tank interim stabilization program.

Maintain waste within the single-shell tank system, including storage and transfer of waste.

Maintain waste within the double-shell tank system.

Perform interim stabilization of single-shell tanks. This project includes \$35,110,000 for interim stabilization to support activities to be performed under the Consent Decree.

Continues funding and construction of the Tank Farm Restoration and Safe Operations construction line-item (97-D-402). Included in the funding totals are \$13,961,000 in FY 1998, \$22,723,000 in FY 1999, and \$20,516,000 in FY 2000 for the line-item.

RL-TW03	112,527	120,823	151,972
---------------	---------	---------	---------

Metrics			
High-Level Waste			
Stored	204,000.0	207,000.0	221,000.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-TW04 / Retrieval Project

This project’s mission is to retrieve wastes from the single-shell and double-shell tanks and designated miscellaneous underground storage tanks; provide the waste to privatization contractor for treatment, and close waste tanks in accordance with regulatory requirements. These tanks are essential to successfully meld the operations of the Tank Waste Remediation System and the privatization contract. Otherwise, the wastes can not be successfully transferred, treated, and immobilized.

- # Start the production phase by completing startup activities and readiness-for-delivery of feed to the privatization contractor by FY 2002.
- # Complete sluicing campaign and initiate Tank 106-C heel removal and continue vadose zone characterization that will provide sufficient data to begin the National Environmental Policy Act closure process.
- # Perform hydraulic sluicing and heel removal technology demonstration;
- # Perform retrieval using the Initial Single Shell Tank Retrieval System; and
- # Develop mixer pump technology and install retrieval systems for the Double Shell Tank retrieval.
- # Continues funding and construction of the Initial Tank Retrieval System construction line-item 94-D-407. Included in the funding totals are \$10,100,000 for FY 1998, \$32,860,000 for FY 1999, and \$4,060,000 for FY 2000 for the line-item.

RL-TW04	56,917	64,414	55,113
---------------	--------	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-TW05 / Process Waste Support

The Process Waste Support Project provides for pretreatment and immobilization of the waste in the Hanford Tank Farms.

- # Integrate the operations of the Tank Waste Remediation System and the Privatization contractor to ensure the success of the mission of the Disposal Program and meet the Tri-Party Agreement milestones.
- # Perform assessments of the privatization contractor to assure that the contract requirements are met, and that the privatization contractor's proposals provide the best value for the Department of Energy.

RL-TW05	18,158	2,168	10,241
---------------	--------	-------	--------

Metrics
 No quantifiable corporate performance measures are associated with this project.

RL-TW08 / Process Waste Privatization Infrastructure

This provides the required facilities, physical interfaces and systems to assure integration of the privatization contractor with Hanford, and also covers the cost of water and electricity used by the privatization vendor essential to meeting major Tri-Party Agreement milestones M-50 and M-51. Failure to develop the infrastructure may cause delay or failure of the privatization effort, and risk imposition of significant penalties by the State of Washington.

- # Complete turnover of the site to privatization contractors.
- # Finalize site development and installation of construction utilities.
- # Finalize construction of production utilities.
- # Continues funding and construction of the Privatization Phase I Infrastructure Support construction line-item (99-D-403). Included in the funding totals \$14,800,000 in FY 1999, and \$13,988,000 in FY 2000 for the line-item.

RL-TW08	0	18,400	18,914
---------------	---	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics

No quantifiable corporate performance measures are associated with this project.

RL-TW09 / Immobilized Tank Waste Storage and Disposal Project

Provides safe storage and final near surface disposal at Hanford for immobilized low activity waste, interim storage for immobilized high-level waste, other high-level waste products, and provide for final disposition of Hanford cesium/strontium capsules.

- # Initiate conceptual design, submit a Part B permit application, and issue a Preliminary Safety Analysis Report for the immobilized tank waste storage and disposal project.

RL-TW09	10,776	9,200	7,652
---------------	--------	-------	-------

Metrics

This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.

RL-TW10 / TWRS Management Support

The Management Support Project provides program management services and oversight for the Tank Waste Remediation System.

- # Primary activities include executive management and strategic planning, systems engineering, and administration of program services. These tasks are required for normal project planning and execution. Also includes funds for contractor incentive fee.

RL-TW10	38,087	34,217	38,320
---------------	--------	--------	--------

Metrics

No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

RL-VZ01 / Groundwater/Vadose Zone Integration

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 peoples, apply sound science and technology, and partner with regulators, stakeholders, and Tribal Nations.

- # Development of Revision "0" of the (System Assessment Capability) tool to address impacts of all Hanford Site waste.
- # Implementation of science and technology roadmap to support site assessment and remediation and system assessment capability development.
- # Provides for expert panel peer review.
- # Provides for public involvement and outreach.
- # Continues integration management of planning, execution, and reporting.

RL-VZ01	0	6,700	11,325
---------------	---	-------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

RL-WM03 / Solid Waste Storage and Disposal

Provides centralized facilities for storage of radioactive low-level mixed and transuranic wastes and for disposal of solid radioactive low-level waste for on-site and off-site generators. Included are management operations, surveillance, monitoring and limited maintenance of facility building, burial grounds, and current waste inventories, and receipt of waste from on-site and off-site generators.

- # Dispose of about 2,500 m³ of mixed low-level waste.
- # Dispose of about 3,800 m³ of low-level waste.
- # Complete transition of the Transuranic Storage and Assay Facility and initiate transition of the Nonradioactive Dangerous Waste Storage Facility to Hanford's Facility Deactivation Program and the Landlord Program.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Provide for minimum safe and compliant condition for receipt and storage of low-level waste, mixed low-level waste, and transuranic waste. Provide for disposal of low-level waste, mixed low-level waste, and hazardous waste from on-site and off-site generators, and preparation of transuranic waste for shipment to the Waste Isolation Pilot Plant.
- # Complete the development of a deep disposal trench in the Low-Level Burial Ground for sufficient low-level waste disposal capacity.
- # Complete the development of the Solid Waste Environmental Impact Statement.

RL-WM03 31,551 34,851 36,919

Metrics			
Transuranic Waste			
Storage (m ³)	16,300.0	16,300.0	16,400.0
Mixed Low-Level Waste			
Storage (m ³)	9,171.0	10,000.0	8,815.0
Disposal: On-site/Commercial (m ³)	0.0	0.0	2,525.0
Low-Level Waste			
Storage (m ³)	180.0	180.0	180.0
Disposal: On-site/Commercial (m ³)	5,920.0	6,120.0	3,880.0
Hazardous Waste			
Disposal Commercial Waste (MT)	186.0	32.7	27.4

RL-WM04 / Solid Waste Treatment

This project provides on-site and commercial mixed waste treatment, waste verification and repackaging, and decontamination services to customers throughout the Hanford site. The work is performed in existing facilities at Hanford including the Waste Receiving and Processing Facility and limited decontamination services at the T-Plant complex.

- # Continue preparation of disposal ready transuranic waste for future shipments to the Waste Isolation Pilot Plant.
- # Fund Waste Receiving and Processing Facility transuranic and mixed low-level waste processing line operations.
- # Complete and maintain the Waste Isolation Pilot Plant certification activities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Provide for minimum safe condition and limited site-wide decontamination services.

RL-WM04	30,134	22,089	25,359
-------------------	--------	--------	--------

Metrics			
Transuranic Waste			
Treatment (m ³)	0.0	182.0	390.0
Disposal Ready for Shipment to DOE Waste Disposal Site (m ³)	0.0	22.0	131.0
Mixed Low-Level Waste			
Treatment (m ³)	22.0	608.0	500.0
Low-Level Waste			
Treatment (m ³)	12.0	0.0	0.0

RL-WM05 / Liquid Effluents Project

Manages and integrates the current and future liquid effluent streams on the Hanford site through the timely storage, treatment, including volume reduction for the tank farms, and disposal.

Reduce about 1,000,000 gallons of high-level waste tank volumes through the 242-A Evaporator.

Provide site-wide liquid effluent services at five liquid effluent facilities.

RL-WM05	30,378	29,359	30,988
-------------------	--------	--------	--------

Metrics
No quantifiable corporate performance measures are associated with this project.

RL-WM06 / Analytical Services

Provides for integrated waste and environmental sample analysis, process control support, field and sampling services, development services and expertise through on-site analytical laboratories or commercial services. Of significance is the analytical support to the Tank Waste Remediation System, spent nuclear fuel program, solid wastes, liquid effluent, and environmental restoration activities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Continue to provide site-wide analytical services through three on-site laboratories and support commercial lab contracts.

RL-WM06 28,518 26,801 26,734

<p>Metrics No quantifiable corporate performance measures are associated with this project.</p>

Total, Richland 647,198 665,992 687,397

Explanation of Funding Changes from FY 1999 to FY 2000

<p>FY 2000 vs. FY 1999 (\$000)</p>
--

HQNP-SI01-LT-RL / Security Investigations

No significant change. 16

RL-ER01 / 100 Area Remedial Action

This increase in funding is required to handle additional waste volume being excavated in the 100 Areas. 4,057

RL-ER02 / 200 Area Remedial Action

This decrease in funding in FY 2000 reflects postponement of all restoration activities in the 200 Area until FY 2001. -1,967

RL-ER03 / 300 Area Remedial Action

This decrease in funding provides for completion of two release sites in FY 2000, following three release site completions in FY 1999. The Milestone M-16-03D is in the process of being re-negotiated. -1,513

RL-ER04 / Environmental Restoration

This decrease in funding is linked to completion of a major facility expansion in FY 1999. No facility expansion will be conducted in FY 2000; transportation and disposal activities continue in FY 2000. -13,922

FY 2000 vs. FY 1999 (\$000)

RL-ER05 / Facility Surveillance and Maintenance

The slight decrease in funding reflects a combination of completion of backlogged corrective maintenance activities on surplus facilities (100-N Area), less waste sites where surveillance and maintenance is needed (due to completions) and efficiencies realized through remote monitoring. -1,566

RL-ER06 / Decontamination and Decommissioning

No significant change. -771

RL-ER07 / Long-Term Surveillance and Maintenance

No significant change. 1

RL-ER08 / Ground Water Management

No significant change. 242

RL-ER10 / Program Management and Support

No significant change. -86

RL-HM01 / HAMMER

Cost increase represents minimum allowance for growth in health and safety training. 100

RL-OT01 / Mission Support

No significant change. -314

RL-OT04 / Richland Directed Support

Cost decrease is due to the scheduled closeout of the Westinghouse Hanford contract; the completed implementation of the Hanford Health Information Network; and complete settlements for payments-in-lieu-of-taxes and suspension of current payments. -8,241

RL-RG01 / TWRS Regulatory Unit

Small increase is needed for review of additional BNFL, Inc. deliverables. This project is mandatory because the Tank Waste Remediation System privatization contractor cannot proceed if the regulatory unit does not carry out its nuclear safety regulatory responsibilities. 624

FY 2000 vs. FY 1999 (\$000)

RL-ST01 / PNNL Waste Management

Decrease reduces legacy waste and contamination management efforts at the Pacific Northwest National Laboratory facilities. -1,059

RL-TP02 / WESF Sub-Project

Increase allows for cesium/strontium capsule storage and leak detection system upgrades; as well as facility safety analysis report revision. 3,800

RL-TP13 / Landlord Project

Cost increase is due to utility and emergency vehicle replacements, automation upgrades, and road refurbishment. 1,401

RL-TW01 / Tank Waste Characterization

The decrease assumes the Defense Nuclear Facilities Safety Board Recommendation 93-5 will be closed before FY 2000, in which case the need to sample tanks for safety-related reasons significantly decreases. The Tri-Party Agreement milestones for characterization should not be affected. However, the reduced budget may not support characterization infrastructure to respond to emerging needs. -10,703

RL-TW02 / Tank Safety Issue Resolution Project

The increase is to maintain integrated authorization basis for the management and storage of waste by the Office of River Protection, and will fund a second transfer of waste from SY-101, as required. 6,791

RL-TW03 / Tank Farms Operations

The funding fully supports activities within the planned baseline scope, with a major increase related to the stabilization of high-level waste tanks as a result of the Consent Decree. 37,940

RL-TW04 / Retrieval Project

The decrease is because construction for the Initial Tank Retrieval System (94-D-407) is being delayed to meet the new privatization schedule. It will still provide timely feed delivery to the BNFL, Inc. to support the 90 percent confidence level schedule. -9,301

FY 2000 vs. FY 1999 (\$000)

RL-TW05 / Process Waste Support

The increase is needed because the privatization contractor will be moving from design into the construction phase, which requires more DOE support. 8,073

RL-TW08 / Process Waste Privatization Infrastructure

No significant change. 514

RL-TW09 / Immobilized Tank Waste Storage and Disposal Project

Decrease is due to slow-down of design efforts because the BNFL, Inc. schedule allows delay in availability of storage facilities. -1,548

RL-TW10 / TWRS Management Support

Increase related to systems engineering efforts aimed at resolving numerous issues in the tank farms, such as single shell tank pumping in response to the Consent Decree. 4,103

RL-VZ01 / Groundwater/Vadose Zone Integration

The increase in funding is to support the continued development of the system assessment capability, which will assess the impacts of all Hanford Site wastes and the implementation of the applied science aspects of the science and technology roadmap with specific emphasis on the vadose zone and inventory technical elements. 4,625

RL-WM03 / Solid Waste Storage and Disposal

Increase is due to the preparation of disposal ready transuranic wastes for shipment to the Waste Isolation Pilot Plant. 2,068

FY 2000 vs. FY 1999 (\$000)

RL-WM04 / Solid Waste Treatment

# Increase for the Waste Receiving and Processing Plant treatment of transuranic waste for the Waste Isolation Pilot Plant.	3,270
---	-------

RL-WM-05 / Liquid Effluents Project

# Increase provides for a 242-A evaporator campaign, which is used to reduce high-level waste tank volumes.	1,629
---	-------

RL-WM06 / Analytical Services

# No significant change.	-67
----------------------------------	-----

Total Funding Change, Richland	<u>28,196</u>
--	---------------

Savannah River

Mission Supporting Goals and Objectives

Mission

The Savannah River Site is a key United States Department of Energy facility in accomplishing the mission of the Defense Environmental Management, Post 2006 Completion account.

The 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 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, waste management (high-level, transuranic, hazardous, mixed low-level, and other), deactivation, remediation, and supporting landlord requirements. This account funds all activities whose life-cycle will be completed after FY 2006.

Program Goal

The Savannah River Site is committed to managing the spent nuclear fuel, stabilizing nuclear materials, and managing all types of wastes using currently available (or near-term) technology and facilities. Eventually, the nuclear materials would be dispositioned and the remaining spent nuclear fuel and wastes would be sent to geologic repositories. To the extent possible (to be determined through technical analyses, National Environmental Policy Act review, and the regulatory process) Savannah River may be able to assist other sites in elimination of their Cold War "legacies". The Savannah River Site intends to complete stabilization of all on hand spent nuclear fuel requiring stabilization and all nuclear materials in FY 2006. Foreign Research Reactor spent nuclear fuel will continue to be accepted until FY 2009 and Domestic Research Reactor spent fuel will continue to be received at the Savannah River Site well beyond this date. This spent nuclear fuel will be prepared and stored in a form that can be shipped to a geologic repository beginning approximately 2015. Approximately seventeen 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 by 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 on-site, the extent of facility and land contamination, and its potential to help solve 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. 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

In FY 2000, 67 casks of spent nuclear fuel are expected to be received from foreign and domestic sources and the fuel (i.e., not the casks) safely stored in Savannah River's basins. One-hundred canisters of high-level waste will be produced at the Defense Waste Processing Facility and 348 m³ of high-level waste will be treated. The Consolidated Incinerator Facility will continue to operate and will treat mixed low-level waste, and hazardous waste. Approximately 70,000 m³ of other waste will be treated at the Effluent Treatment Facility and disposed of on-site. No facilities will be deactivated in order to avail funding for higher priority activities, although 15 release sites (about 3 percent of the release sites) will be remediated in FY 2000.

The goal 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 or preparing it for long-term disposition in a Federal repository. Some of the spent nuclear fuel currently on-site (aluminum based or clad spent nuclear fuel in a degraded condition) is considered to be "at-risk" and is scheduled to be shipped to the canyon facilities for processing. Potentially difficult to dispose of spent nuclear fuel is currently being evaluated for processing in the canyons in preparation for eventual disposition. Savannah River plans to prepare other intact fuel for ultimate disposal in a geologic repository through a program in which the intact fuel is treated by one of two alternative candidate technologies (direct co-disposal or dilution by melting followed by co-disposal). To support this approach, the Savannah River Site has included in this budget request a design only line-item project to design a transfer and storage facility to receive, treat, and/or package spent nuclear fuel in canisters and safely dry-store this spent nuclear fuel in a "road-ready" form until a geologic repository is available. In addition to providing needed storage capacity, this facility will also permit an accelerated closure of the Receiving Basin for Offsite Fuel, which is being used for wet storage on an interim basis.

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 volume reduce, treat, and vitrify high-level waste for final disposal and to empty storage tanks so they can be closed. Savannah River has an estimated 125,398 m³ (approximately 34,000,000 gallons) of high-level waste in the form of liquid, sludge and salt cake. This volume represents about 480,000,000 curies of radioactivity and is stored in 49 active tanks in two "tank farms" and related high-level waste facilities. Included are operation of the high-level waste evaporators to provide space in the tank farms to handle waste generated by the stabilization of nuclear materials, the continued safe storage of existing and newly generated high-level waste, the operation of the Defense Waste Processing Facility to vitrify high-level waste, the operation of Extended Sludge Processing to provide sludge feed for the Defense Waste Processing Facility, 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. 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 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 is in progress. All known salt processing options will be evaluated against the high-level waste system requirements and the best option will be selected in FY 2000. In order to support this activity, a supplemental Environmental Impact Statement will be prepared to assist in the decision making process.

Savannah River also manages varying amounts of other waste types. Efforts to reduce the legacy volume of waste at the site will be curtailed in the low-level waste and hazardous waste areas. Major activities in solid waste management include: continued off-site shipment of hazardous waste and polychlorinated biphenyl waste, identified in the Site Treatment Plan, initial shipments of transuranic waste to the Waste Isolation Pilot Plant, continued operation of the Effluent Treatment Facility, and continued sanitary waste operations.

The Savannah River Site has identified over 300 currently inactive legacy facilities in a position 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 avail funding for higher priority activities. This budget does not include any significant activity related to facility deactivation.

The environmental restoration activities encompass all aspects of assessment, and remediation of facilities and release sites (including associated ground water) that are no longer a part of active operations at the Savannah River Site. There are currently 477 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 on-site 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 1998, 175 release sites were completed. In FY 1999, 12 release sites are forecast for completion, and this FY 2000 budget will result in completion of an additional 6 release sites. The Savannah River Site's objective for environmental restoration remediation activities is to have most high-risk release sites in remediation by FY 2006.

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 and for payment-in-lieu-of-taxes; and to several universities for research in support of Site missions. It also includes interagency agreements, plus a cooperative agreement with the University of Georgia for managing the Site ecology laboratory.

Performance Measures

Performance Measures are provided at an aggregate level after the Funding by Site table; as well as, at a project level in the Detailed Program Justification.

Significant Accomplishments and Program Shifts

- # Achieved space gain of 2,500,000 gallons (FY 1998) and 2,900,000 gallons (FY 1999) in tank farm through evaporation.
- # Closed the second high-level waste tank (FY 1998).
- # Produced 250 canisters (FY 1998) and 200 canisters (FY 1999) of vitrified high-level waste at the Defense Waste Processing Facility.
- # Disposed of approximately 800 low-level waste drums, which were formerly managed as transuranic waste (FY 1998).

- # Performed equipment upgrades, training and procedure development, and startup activities necessary to support the shipment of transuranic waste to the Waste Isolation Pilot Plant (FY 1998/FY 1999).
- # Operation of the Consolidated Incinerator Facility to treat mixed low-level waste and low-level waste (FY 1998/FY 1999).
- # Commence operation of the Replacement High-Level Waste Evaporator (FY 1999).
- # Pursue alternate technologies for salt processing (FY 1999).
- # Completion of 63 release site assessments (FY 1998) and 27 release site assessments (FY 1999).
- # Completion of 60 release site remediations (FY 1998) and 12 release site remediations (FY 1999).
- # Remediation of 360,000,000 gallons of ground water thru FY 1999, and removal of 115,000 lbs. of volatile organic compound (FY 1999).
- # Executed the 320-M Laboratory deactivation plan - written and approved in FY 1997.
- # Resumed operation of the M-Area Vitrification Facility shutdown in FY 1997 for melter replacement (FY 1998).
- # Deactivation planning for the 320-M Target Fabrication Facility, the 313-M Target Slug Fabrication Facility, 322-M Metallurgical Laboratory, and the 321-M Fuel Fabrication Facility (FY 1998).
- # Complete vitrification of all M-Area waste tank sludge (FY 1999).
- # Complete deactivation of the Liquid Effluent Treatment Facility (FY 1999).
- # Receive 35 casks of foreign research reactor spent nuclear fuel and 37 casks of domestic research reactor spent nuclear fuel (FY 1999).
- # Demolition of the P and C powerhouses (FY 1998).
- # Completed R-Reactor disassembly basin precharacterization sampling (FY 1998).
- # Began operation of the C-Area Decon Facility (FY 1998).
- # Initiated development of facility documentation and a surveillance and maintenance plan for P-Area (FY 1999).
- # Deactivation of the R-Reactor disassembly basin (FY 1999).
- # Vitrify an additional 100 canisters of high-level waste and evaporate 3.8 million gallons of high-level waste to provide additional tank space (FY 2000).
- # Prepare 3 shipments of disposal-ready transuranic waste for shipment to the Waste Isolation Pilot Plant (FY 2000).
- # Complete 6 release sites and complete assessments for 25 others (FY 2000).
- # Receive 29 casks of Foreign Research Reactor Spent Nuclear Fuel (FY 2000).

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
HQNP-SI01-LT-SR / Security Investigations . . .	0	1,804	1,800	-4	-0.2%
SR-DO02 / WSI Landlord Project	52,600	54,375	54,475	100	0.2%
SR-DO03 / Savannah River Natural Resource Management and Research Institute	7,800	6,379	7,038	659	10.3%
SR-DO04 / Ecology Lab Project	8,600	7,896	8,084	188	2.4%
SR-DO05 / DOE External Program Support . . .	5,718	6,155	6,150	-5	-0.1%
SR-DO07 / DOE Program Support	5,999	10,923	7,208	-3,715	-34.0%
SR-ER01 / Flood Plain Swamp Project	5,543	8,482	6,112	-2,370	-27.9%
SR-ER02 / Four Mile Branch Project	28,372	25,140	35,379	10,239	40.7%
SR-ER03 / Lower Three Runs and Operations Project	4,385	20,137	26,603	6,466	32.1%
SR-ER04 / Pen Branch Project	10,043	6,866	8,984	2,118	30.8%
SR-ER05 / Steel Creek Project	2,431	7,451	3,316	-4,135	-55.5%
SR-ER06 / Upper Three Runs Project	22,091	20,115	15,879	-4,236	-21.1%
SR-ER07 / Program Management	23,845	11,500	13,470	1,970	17.1%
SR-FA02 / F-Canyon Deactivation Project	0	522	537	15	2.9%
SR-FA16 / F-Area Monitoring	1,545	738	444	-294	-39.8%
SR-FA17 / H-Area Monitoring and Minor Facility Monitoring	0	2,764	4,713	1,949	70.5%
SR-FA18 / M-Area Monitoring Project	23,692	11,103	8,087	-3,016	-27.2%
SR-FA19 / D-Area Monitoring Project	0	0	1,261	1,261	>999.9%
SR-FA20 / Reactors Monitoring Project	8,582	10,081	13,566	3,485	34.6%
SR-HL01 / H-Tank Farm	85,756	91,516	87,851	-3,665	-4.0%
SR-HL02 / F-Tank Farm	51,347	57,479	60,737	3,258	5.7%
SR-HL03 / Waste Removal Operations and Tank Closure	1,603	3,099	1,943	-1,156	-37.3%
SR-HL04 / ITP/ESP/LW Operations	75,233	48,374	58,446	10,072	20.8%
SR-HL05 / Vitrification	126,864	131,959	126,614	-5,345	-4.1%
SR-HL06 / Glass Waste Storage	324	599	368	-231	-38.6%
SR-HL07 / Effluent Treatment Facility	17,900	16,539	17,580	1,041	6.3%
SR-HL08 / Saltstone	8,096	1,102	1,222	120	10.9%
SR-HL12 / High-Level Waste Removal	23,923	22,874	14,433	-8,441	-36.9%
SR-HL13 / Salt Disposition	0	12,983	42,129	29,146	224.5%
SR-IN11 / Infrastructure Line-Item	0	1,274	200	-1,074	-84.3%
SR-IN12 / Operating Projects	10,207	18,246	32,693	14,447	79.2%
SR-SF01-LT / K-Reactor Spent Nuclear Fuel Project (Post 2006)	0	0	33,410	33,410	>999.9%
SR-SF02 / L-Reactor Spent Nuclear Fuel Project	20,108	31,826	36,187	4,361	13.7%

**Environmental Management/Defense
Environmental Restoration and Waste
Management/Post 2006 Completion/
Savannah River**

FY 2000 Congressional Budget

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
SR-SF03 / RBOF Spent Nuclear Fuel Project	19,155	18,206	11,773	-6,433	-35.3%
SR-SF04-LT / Heavy Water - D-Area (Post 2006)	0	0	4,984	4,984	>999.9%
SR-SF09 / Spent Nuclear Fuel Treatment and Storage	950	1,455	11,500	10,045	690.4%
SR-SW01 / Consolidated Incinerator Facility ..	24,873	23,255	26,045	2,790	12.0%
SR-SW02 / Transuranic Waste Project	9,220	13,991	10,602	-3,389	-24.2%
SR-SW03 / Mixed Low-Level Waste Project ..	2,854	4,994	5,845	851	17.0%
SR-SW04 / Low-Level Waste Project	8,602	12,150	9,947	-2,203	-18.1%
SR-SW05 / Hazardous Waste Project	5,468	4,901	3,971	-930	-19.0%
SR-SW06 / Sanitary Waste Project	1,747	2,068	2,156	88	4.3%
SR-SW07 / Pollution Prevention	4,679	1,710	1,122	-588	-34.4%
Total, Savannah River	710,155	733,031	824,864	91,833	12.5%

Funding By Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Savannah River Site	682,038	699,874	794,584	94,710	13.5%
Savannah River Operations Office	28,117	33,157	30,280	-2,877	-8.7%
Total, Savannah River	710,155	733,031	824,864	91,833	12.5%

Metrics Summary

	FY 1998	FY 1999	FY 2000
Remedial Action/Release Site			
Assessments	63.0	28.0	25.0
Cleanups	60.0	13.0	6.0
Transuranic Waste			
Storage (m ³)	10,837.0	11,527.0	11,616.0
Ship to DOE Disposal Site (m ³)	0.0	44.0	35.0
Mixed Low-Level Waste			
Storage (m ³)	2,121.0	2,276.0	1,160.0
Treatment (m ³)	3,183.0	1,073.0	795.0
On-site/Commercial (m ³)	0.0	0.0	50.0
Low-Level Waste			
Treatment (m ³)	7,400.0	11,417.0	3,795.0
On-site/Commercial Dispsal (m ³)	4,423.0	9,576.0	3,235.0
Storage (m ³)	18,040.0	14,854.0	14,525.0
Hazardous Waste			
On-site/Commercial Disposal (MT)	482.0	816.0	523.0
Spent Nuclear Fuel			
Stable, Not Disposition-Ready (m ³)	28.2	40.6	47.7
Stable, Not Disposition-Ready (MTHM)	21.9	23.5	24.3
In Stabilization Process (m ³)	52.2	52.1	59.6
In Stabilization Process (MTHM)	21.7	21.7	22.6
Made Disposition During the Period (m ³)	0.0	0.1	0.0
High-Level Waste			
Storage (m ³)	128,513.0	126,501.0	125,917.0
Treatment (m ³)	871.0	696.0	348.0
Canisters Produced	250.0	200.0	100.0

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.

The site is owned by the Department of Energy and operated by an integrated team led by Westinghouse Savannah River Company. Under the contract that went into effect October 1, 1996, the Westinghouse Savannah River Company is responsible for the site's nuclear facility operations; Savannah River Technology Center; 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. Wackenhut Services, Incorporated, is responsible for the Sites physical security 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/clean-up of several portions of the Site via Resource Conservation and Recovery Act permits as required by several settlement agreements.

Detailed Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Savannah River Site is managed through an incentivized integrated contract, with fixed-price subcontracts, to assure the most cost efficient service to the Government. The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the site as outlined in the *Accelerating Cleanup: Paths to Closure* plan. The funds requested for FY 2000 are appropriate to perform the activities based on the use of the “Activity-Based Costing Methodology” and on an independent review of the programmatic assumptions and projected scope. All construction line-item projects were validated and many projects received an independent cost estimate review.

HQNP-SI01-LT-SR / Security Investigations

Non-Federal security investigations will be performed in accordance with DOE Order requirements.

Funding will be used to perform new security investigations and re-investigations for non-Federal employees for the Savannah River Site.

HQNP-SI01-LT-SR	0	1,804	1,800
-----------------------	---	-------	-------

Metrics No quantifiable corporate performance measures are associated with this project.

SR-DO02 / WSI Landlord Project

Wackenhut Services, Incorporated-Savannah River Site is the Management and Operating contractor for security services at the Savannah River Site. The Wackenhut Services, Incorporated-Savannah River Site provides, trains, and maintains a uniformed protective force for the physical protection of the Department of Energy security interests and other related duties.

Responsibilities include protection against theft of Special Nuclear Material and government property, prevention of radiological, toxicological and industrial sabotage, and protection of site employees and the public. The contractor employs armed and unarmed security personnel, supervisors, management, and other administrative and support personnel to meet the varied requirements of the contract.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Increase of protective force staffing at 100-K in support of increased material protection requirements for plutonium storage.

Continue to enforce security requirements for the site as outlined in the DOE Orders, the Site Safeguards and Security Plan and as specified in the Management and Operations contract.

SR-DO02 52,600 54,375 54,475

Metrics

No quantifiable corporate performance measures are associated with this project.

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

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 on-site initial attack capability as well as fire prevention, presuppression, and detection program. Smoke emissions are managed to reduce negative impacts to personnel and facilities. Planning, public affairs, health and safety, administration, and the Historically Black Colleges and Universities environmental field station, and a natural resources science, math, and engineering education program are integral components of the resource management activities of the Savannah River Institute.

Manage forest and land resources on a 300 square mile site.

Document endangered wildlife and plant life.

Perform watershed stabilization and erosion control.

Continue maintenance of secondary roads and bridges.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Perform biological evaluations.

Perform prescribed burning.

Perform research on flora and fauna.

SR-DO03	7,800	6,379	7,038
---------------	-------	-------	-------

Metrics

No quantifiable corporate performance measures are associated with this project.

SR-DO04 / Ecology Lab Project

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 clean-up 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 clean-up and remediation while ensuring a 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 Savannah River Ecology Laboratory has a laboratory and field-research program recognized by scientists from all over the world. The laboratory has published over 2000 articles in peer reviewed journals and has more than 25 books authored by its scientific staff.

The facilities of the Savannah River Ecology Laboratory consist of unique research labs with specialty instruments to special outdoor facilities such as greenhouses, aviaries, experimental ponds, a rhizotron, animal care facility, and a specially equipped distance learning classroom. The laboratory has a program, which reaches out to our stakeholders in the area of the Savannah River Site, and provides classroom programs and information on the benefits of the Savannah River Site as a National Research Park.

Conduct studies in radioecology and ecological stewardship.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Continue active research in environmental chemistry/hydrogeochemistry; environmental computational chemistry; phytoremediation, ecological stewardship; ecotoxicology, remediation, and risk assessment; and radioecology.

SR-DO04 8,600 7,896 8,084

Metrics No quantifiable corporate performance measures are associated with this project.

SR-DO05 / DOE External Program Support

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.

- # The United States Army Corps of Engineers, the United States Forestry Service, and the United States Geological Survey will provide program support to the environmental restoration division.
- # University research grants will be provided to support the environmental restoration program.
- # Funding is provided under the Agreements-in-Principle for the South Carolina Department of Health and Environmental Control Emergency Preparedness/Planning, Emergency Monitoring and Oversight, and the Georgia Emergency Management Agency for oversight of emergency preparedness activities and non-regulatory environmental monitoring programs.
- # The State of the South Carolina Department of Health and Environmental Control will provide oversight of cleanup activities performed under the Federal Facilities Agreement.

SR-DO05 5,718 6,155 6,150

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-DO07 / DOE Program Support

The overall purpose of this project is to enlist off-site resources to independently verify site characteristics in a global sense, and create a culture within surrounding communities, which enables the Savannah River Site continuation of environmental restoration and waste management missions, which need public trust and confidence.

Program support will be provided for payment-in-lieu-of-taxes, Historically Black Colleges and Universities, South Carolina Water Resources Commission, South Carolina Universities and Research and Education Foundation, interagency agreements, such as with the Office of Personnel and Management for investigations of the Spent Nuclear Fuel project and the Departmental initiatives.

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 and other Department of Energy sites to maintain stakeholder involvement. Funding is provided for consultants assisting the Department of Energy-Savannah River on labor law and other issues. Other activities include support for cooperative and interagency agreements providing long-term observation networks to monitor water level, flow paths, water quality, and to detect changes as ground water pumpage increases or decreases. Also, supports training and the stewardship program.

- # Continuation of the National Environmental Training Organization funded by Savannah River.
- # Monitor the flow of the Site's wastewater effluents and streams.
- # Complete Environmental Impact Statements, as required.
- # Support compliance with the Clean Water Act.
- # Perform archaeological field reviews, and curation of artifacts in compliance with the Archaeological Resource Protection Act and Historic Preservation Act.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Make payment-in-lieu-of-taxes to the counties of Aiken, Allendale, and Barnwell.

Limited support for the Historically Black Colleges and Universities and other grants.

SR-DO07 5,999 10,923 7,208

Metrics No quantifiable corporate performance measures are associated with this project.

SR-ER01 / Flood Plain Swamp Project

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 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.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

# TNX-Area Groundwater subproject: Operate two Geo Siphon Cells and begin installation of additional cells and vapor extraction units.			
# TNX-Area Old TNX Seepage Basin subproject: Begin remedial action at this basin.			
# D-Area Oil Seepage Basin subproject: Complete remedial action at this basin.			
# D-Area Waste Oil Facility subproject: Continue assessment work at this facility.			
# Flood Plain Swamp Integrator Operable Unit subproject: Complete work plan preparation for this subproject and begin field start for monitoring.			
# Savannah River Integrator Operable Unit subproject: Continue field monitoring at this subproject.			
SR-ER01	5,543	8,482	6,112

Metrics			
Remedial Action/Release Site			
Assessments	8.0	4.0	2.0
Cleanups	8.0	1.0	2.0

SR-ER02 / Four Mile Branch Project

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 area: 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

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

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 on human health and the environment;
 - ▶ Analysis of the impact on the watershed;
 - ▶ Post-action monitoring to ensure that the implemented technology was effective.
- # Burial Ground Complex subproject: Obtain final Record of Decision and continue remediation for the 76 acre Old Radioactive Waste Burial Ground including grouting of 22 underground solvent tanks.
- # Mixed Waste Management Facility Ground water subproject: Begin design phase of the ground water remediation system. Begin interim action for this subproject.
- # F and H-Area Seepage Basin Ground water subproject: Operate two major water treatment units to remove radioactive and hazardous contaminants and establish hydraulic control of tritium contamination.
- # H Retention Basin subproject: Complete remedial design for this basin.
- # C Reactor Seepage Basin subproject: Complete assessment and begin remedial design at this basin.
- # C Reactor Ground water subproject: Continue assessment work at this Subproject.
- # Road A Chemical Basin subproject: Continue assessment work at this basin.
- # F and H Inactive Sewer Line subproject: Continue remedial action at this basin.
- # F Retention Basin subproject: Continue remedial action at this basin.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

C-Area Hazardous Material Unit subproject: Complete remedial action at this unit.

Central Shops Hazardous Material Unit subproject: Begin well monitoring at this subproject.

Four Mile Branch Integrator Operable Unit subproject: Continue monitoring actions at this subproject.

SR-ER02 28,372 25,140 35,379

Metrics			
Remedial Action/Release Site			
Assessments	4.0	0.0	7.0
Cleanups	4.0	0.0	1.0

SR-ER03 / Lower Three Runs and Operations Project

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 Agreements. 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 indicates the ground water is contaminated with tritium, chlorinated volatile organic, other radionuclides, heavy metals, and sulfate.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Remediation of the Lower Three Runs 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 Lower Three Runs Watershed project will require remediation of primary source material, affected soils, affected surface water pathways, and affected ground water. 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 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, analysis of the impact on the watershed, post-action monitoring to ensure that the implemented technology was effective.

- # R-Reactor Seepage Basin subproject: Complete the Record of Decision for this subproject.
- # P-Reactor Seepage Basin subproject: Complete workplan for this subproject.
- # P-Reactor Groundwater subproject: Begin workplan development for this subproject.
- # R-Area Hazardous Material Unit 131-R/1R subproject: Complete workplan for this subproject.
- # Bingham Pump Hazardous Material Unit subproject: Continue remedial action at this subproject.
- # Continue Assessment and Remediation Work at the following Operations subprojects: R-Area Acid/Caustic Basins, Gunsite 218, Par Pond Sludge Application Site, Lower Three Runs Ash Basin, Lower Three Runs Integrator Operable Unit, Post Closure Monitoring and Maintenance, Vegetation Removal, Engineering Technical Initiatives, Waste Operations, Watershed Assessment, Waste Certification/Coordination, Technology Demonstration, Facility Support - Operations, Investigation Derived Waste, Site Evaluations, Well Sampling and Analysis.

SR-ER03	4,385	20,137	26,603
---------------	-------	--------	--------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Metrics			
Remedial Action/Release Site			
Assessments	4.0	7.0	7.0
Cleanups	4.0	1.0	0.0

SR-ER04 / Pen Branch Project

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 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 ground water. 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 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, analysis of the impact on the watershed and post-action monitoring to ensure that the implemented technology was effective.

- # Chemical/Metal Pesticide Hazardous Material Unit subproject: continue remedial action at this subproject.
- # Ford Building Seepage Basin Subproject: Complete Record of Decision for this subproject.
- # K-Reactor Seepage Basin subproject: Continue remedial action at this subproject.
- # L-Area Hazardous Material Unit 131-3L subproject: Continue remedial action at this subproject.
- # K-Area Hazardous Material Unit 131-3K subproject: Begin remedial action at this subproject.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Central Shops Sludge Lagoon subproject: Continue assessment work at this subproject.

SR-ER04	10,043	6,866	8,984
---------------	--------	-------	-------

Metrics			
Remedial Action/Release Site			
Assessments	4.0	4.0	5.0
Cleanups	4.0	2.0	0.0

SR-ER05 / Steel Creek Project

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 ground water. 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 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, 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;

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- ▶ 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 on human health and the environment, and post-action monitoring to ensure that the implemented technology was effective.

L-Area Oil/Chemical Basin subproject: Complete workplan and begin assessment at this subproject.

L-Lake subproject: Begin assessment work at this subproject.

P-Area Hazardous Material Unit 131-P subproject: Begin remedial design at this subproject.

SR-ER05	2,431	7,451	3,316
---------------	-------	-------	-------

Metrics			
Remedial Action/Release Site			
Assessments	2.0	1.0	0.0
Cleanups	2.0	1.0	0.0

SR-ER06 / Upper Three Runs Project

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.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Remediation of the Upper Three Runs 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 Upper Three Runs Watershed Project will require remediation of primary source material, affected soils, affected surface water pathways, and affected ground water. 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 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, analysis of the impact on the watershed, and post-action monitoring to ensure that the implemented technology was effective.

Remediation of the Upper Three Runs 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 on human health and the environment, and post-action monitoring to ensure that the implemented technology was effective.

Old F-Area Seepage Basin subproject: Continue post closure well monitoring at this subproject.

Savannah River Laboratory Seepage Basin subproject: Complete assessment work on this subproject.

A/M-Area Ground water subproject: Complete ground water remediation operations and continue well monitoring at this subproject.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

# Continue Ground Water and Vadose Zone Remediation Operations at the following subprojects: Savannah River Laboratory, Southern Sector, Vadose Zone, Purge Water Disposal, M-1 Air Stripper, Western Sector, Met Laboratory.			
# A-Area Hazardous Material Unit subprojects: Complete assessment and Record of Decision, complete remedial action, and continue well monitoring.			
# Miscellaneous Chemical Basin/Metal Hazardous Material Unit subproject: Continue remedial action at this subproject.			
# Non Radioactive Waste Disposal Facility Ground Water subproject: Continue ground water remediation operations and employ bioremediation technology at this subproject.			
SR-ER06	22,091	20,115	15,879

Metrics			
Remedial Action/Release Site			
Assessments	41.0	12.0	4.0
Cleanups	38.0	8.0	3.0

SR-ER07 / Program Management

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 the program globally, thus providing the means to monitor and measure the total Savannah River Site’s environmental restoration program performance.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Programmatic development is the crosscutting, strategic, and programmatic initiatives that support the Environmental Restoration Division. The objectives are to lead strategic planning and integration, serve as liaison to the Department of Energy for communication, coordinate external visibility, develop performance measures, and manage program improvements.

Environmental restoration program management will be performed as detailed in the following subprojects: Safety and Health Programs, Program Analysis and Controls, Communications Program, Environmental Compliance support, Environmental Management Information System, Quality Assurance, Cost Estimating support.

SR-ER07	23,845	11,500	13,470
---------------	--------	--------	--------

<p>Metrics No quantifiable corporate performance measures are associated with this project.</p>

SR-FA02 / F-Canyon Deactivation Project

The F-Canyon deactivation project provides a methodology whereby a facility interim end state is reached ensuring the safety of the worker, public, and environment while effectively reaching the costs associated with the surveillance and maintenance of the surplus facilities while preparing the facility for turnover for eventual disposition.

Continuation of deactivation project planning.

SR-FA02	0	522	537
---------------	---	-----	-----

<p>Metrics This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-FA16 / F-Area Monitoring

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. Since stabilization processing activities will be continuing in the F-Area facilities through 2002, the F-Canyon, FB-Line, and 235-F facilities will not have achieved a deactivated state.

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 be implemented to maintain safety, health, and environmental requirements. Deactivated facilities are monitored and inspected quarterly to ensure safe conditions are maintained.

- # Continue to maintain 247-F in long-term monitoring.
- # Complete the Transition Report.
- # Develop the F-Canyon and 235-F surveillance and maintenance plans for post operational conditions.

SR-FA16	1,545	738	444
---------------	-------	-----	-----

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

SR-FA17 / H-Area Monitoring and Minor Facility Monitoring

This project covers pre-deactivation, deactivation, and post-deactivation surveillance and maintenance in the H-Area and other minor facilities. The H-Area facilities were originally built to provide chemical separations capabilities of nuclear targets and fuels, transformation of plutonium and neptunium solutions to oxide, and the storage of enriched uranium solutions for recovery.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The purpose of the H-Area Monitoring project is to capture the scope and costs for surveillance and maintenance of the facilities that either: 1) are awaiting deactivation, or 2) have been deactivated and are now awaiting a decision on the final disposition.

Only surveillance and maintenance for the reactor heat exchanger repair shop will be funded. Exact scope of the surveillance and maintenance will depend on facility walkdowns and preliminary characterizations undertaken in FY 1998. The current mission for the H-Area will continue. Current funding guidance indicates that deactivation planning and execution activities will begin after FY 2006.

SR-FA17	0	2,764	4,713
---------------	---	-------	-------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

SR-FA18 / M-Area Monitoring Project

This project covers operation of the Vendor Treatment Facility through FY 1999, as well as surveillance and maintenance during pre-deactivation, deactivation, and post-deactivation periods in the M-Area. Post-deactivation surveillance and maintenance activities will commence by FY 2012.

Initial deactivation of the Liquid Effluent Treatment Facility and the process sewer system in accordance with the South Carolina Department of Health and Environmental Control permits will begin in FY 2000. In addition, the Site is contractually responsible for deactivation of the Vendor Treatment Facility and clean closure of tanks. Development of transition documentation and an M-Area interim surveillance and maintenance plan will be completed.

SR-FA18	23,692	11,103	8,087
---------------	--------	--------	-------

Metrics			
Mixed Low-Level Waste			
Treatment (m ³)	2,048.0	232.0	0.0
Storage (m ³)	1,254.0	1,432.0	0.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-FA19 / D-Area Monitoring Project

This project covers surveillance and maintenance activities for surplus facilities in D-Area.

Monitoring of the excess heavy water production facilities will take place.

SR-FA19	0	0	1,261
---------------	---	---	-------

Metrics This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.
--

SR-FA20 / Reactors Monitoring Project

The P-, C-, and R-Reactors were formerly used to irradiate target materials for tritium and plutonium production. Each building is composed of five areas: the Disassembly Basin, Purification Area, Assembly Area, Moderator Storage Area, and the Process Room (reactor tank). Operations for all reactors have ceased and each was placed in a cold shutdown mode with no provision for restart. The C-Reactor assembly area is being utilized as a decontamination center for the site. Funding for operation of the Site Decontamination Center and C-Area administrative facilities is included in this project.

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

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Each reactor's disassembly basin contains contaminated light water, scrap materials, and sludge. Other major hazards associated with the reactor result from continued storage of contaminated heavy water (in the P- and C-Reactor -40 level storage tanks), and presence of fission byproducts and contamination agrees found in a few locations in the buildings. Hazardous materials associated with the building include potential PCB contamination in cables and transformers, and asbestos in flooring, wall panels, insulation and gasket materials. In addition, the P- and C-Area powerhouses are in a relatively advanced state of decay. Some of the problems associated with the latter facilities include friable asbestos, deteriorating piping, ductwork, walkways, and roof.

Perform critical surveillance and maintenance activities.

Preliminary deactivation project planning will be initiated.

Current funding guidance indicates that deactivation planning and execution activities will begin after FY 2006 to meet the Resource Conservation and Recovery Act and DOE Orders on waste minimization. The C-Area Decon Facility will be operational in FY 2000. Funding at this level provides continued funding for a limited deactivation project for the P, C, and R disassembly basin and replacement of the 707-C administrative building roof system.

SR-FA20	8,582	10,081	13,566
---------------	-------	--------	--------

Metrics

This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL01 / H-Tank Farm

The purpose of the H-Tank Farm facility is to safely store and manage an inventory of 19,400,000 gallons (310,000,000 curies) of liquid high-level radioactive waste in 23 underground storage tanks. This waste has accumulated from past 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 tanks were built underground to provide shielding from the intense radiation fields of highly radioactive waste. These tanks provide interim storage.

To accomplish its safe storage and waste management mission, the H-Tank Farm utilizes 24-hour surveillance, monitoring inspection sampling and maintenance of 23 underground high-level radioactive waste storage tanks (tank volumes range between 750,000 gal and 1,300,000 gal each) with the following major systems: Liquid Level Monitoring; Leak Detection; Ventilation and Explosive Gas Monitoring; Temperature Monitoring and Cooling Systems; Remote Inspection of the Tanks and Tank Annuli; 24-hour manning of three control rooms; Operations of 2H evaporator system and operation of the Replacement High-Level Waste Evaporator, (which will be operational in FY 1999); which together will provide an average of 2,800,000 gallons of tank volume “space gain” per year; Waste Transfers (between tanks as well as from H-Canyon, and the Defense Waste Processing Facility to/from F-Tank Farm, and to the Extended Sludge Processing; includes transfer line integrity testing); Area Radiation and Storm Water Monitoring; Critical Maintenance Activities (predictive, preventive, and corrective maintenance, equipment troubleshooting, rigging and heavy equipment support, excavations, and facility outage scheduling); and 299-H Maintenance Facility Operation (which has shielded maintenance cells for repairs to highly contaminated equipment).

Continue radioactive operation of the Replacement High-Level Waste Evaporator Facility.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Perform an estimated 3 inter-area line transfers, 250 canyon receipts, 25 Receiving Basin for Offsite Fuel receipts, and 250 Defense Waste Processing Facility receipts, as well as frequent tank-to-tank transfers within the H-Tank Farm.
- # Receive an estimated 290,000 gallons of high-level liquid waste from the H-Canyon.
- # Receive an estimated 2,000,000 gallons of recycle water from the Defense Waste Processing Facility.
- # Receive an estimated 700,000 gallons of wash water from extended sludge processing.
- # Evaporate an estimated 1,300,000 gallons of liquid at the 2H evaporator.
- # Evaporate an estimated 1,500,000 gallons of liquid at the replacement high-level waste evaporator.
- # Receive an estimated 120,000 gallons of low-level liquid waste from Receiving Basin for Offsite Fuels.
- # Support the closure of Tank 16.
- # These funding levels include line-item construction funding of \$4,622,000 in FY 1998 for project 89-D-174, Replacement High-Level Waste Evaporator.

SR-HL01	85,756	91,516	87,851
-------------------	--------	--------	--------

Metrics			
High-Level Waste			
Storage (m ³)	73,086.0	72,847.0	74,709.0

SR-HL02 / F-Tank Farm

The F-Tank Farm Facility safely stores and manages an inventory of 14,400,000 gallons (170,000,000 curies) of liquid high-level radioactive waste in 20 underground storage tanks. This waste has accumulated from past 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 tanks were built underground to provide shielding from the intense radiation fields of this highly radioactive waste. These tanks provide interim storage.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

To accomplish its safe storage and waste management mission, the F-Tank Farm utilizes 24-hour surveillance, monitoring, inspection, sampling and maintenance of 20 underground high-level radioactive waste storage tanks (tank volumes range between 750,000 gallons and 1,000,000 gallons each) with the following major systems: Liquid Level Monitoring; Leak Detection; Ventilation and Explosive Gas Monitoring; Temperature Monitoring and Cooling Systems; Remote Inspection of the Tanks and Tank Annuli; 24-hour manning of two control rooms; Operation of Evaporator System (2F evaporator to provide an average of 0.6 million gallons of tank volumes “space gain” per year); Waste Transfers (between tanks as well as from F-Canyon and to/from H-Tank Farm; includes transfer line integrity testing); Area Radiation and Storm Water Monitoring; Critical Maintenance Activities (predictive, preventive, and corrective maintenance, equipment troubleshooting, rigging and heavy equipment support, excavations, and facility outage scheduling).

- # Perform an estimated 3 inter-area line transfer, 400 canyon receipts, as well as frequent tank-to-tank transfers within the F-Tank Farm.
- # Receive an estimated 220,000 gallons of high-level liquid waste from the F-Canyon.
- # Receive an estimated 370,000 gallons of wash water from the extended sludge processing.
- # Evaporate an estimated 1,000,000 gallons of liquid.

SR-HL02	51,347	57,479	60,737
---------------	--------	--------	--------

Metrics			
High-Level Waste			
Storage (m ³)	55,107.0	53,202.0	50,689.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL03 / Waste Removal Operations and Tank Closure

This project includes four specific areas of scope related to waste removal from high-level waste tanks and facilities, as well as closure of high-level waste tanks and facilities. Scope areas are: 1) waste removal operations including removing the high-level waste from the waste tanks and water washing the tanks; 2) demonstrating alternative waste removal technologies that are potentially more cost effective than the baseline technologies; and 3) closing each individual tank or facility after waste removal and water washing are complete.

Specific scope is as follows: Waste Removal Operations - Tanks 1-15, 17-39, and 43-47 contain either salt or sludge or, in some cases both. The waste will be removed from each tank by operating slurry pumps and transfers jets, which are being retrofitted on each tank (3 slurry pumps and 1 transfer jet for each salt tank; 4 slurry pumps and 1 transfer pump for each sludge tank). The waste removal activities include adding large amounts of corrosion inhibited water to a tank; operating the slurry pumps to suspend sludge or dissolve salt; transferring the waste out by transfer jet; and then lowering the slurry pumps and repeating the process until the tank is empty. The interior of the tank is then water washed by operating a large 10,000 gallon heated water system connected to rotary spray jets. For those tanks with contaminated annuli, a similar process will be employed for annulus washing. Process samples, waste volume measurements and tank inspections are conducted throughout the waste removal process. Similar activities will take place in process facilities such as evaporator cells and diversion boxes.

Waste Removal Demonstrations - Three new salt removal technologies will be demonstrated individually and in combination: modified density gradient, water jetting and a single slurry pump. Funding is also allocated from sludge/zeolite heel demonstrations in Tanks 18 and 19. The heel removal technologies to be demonstrated are in the process of being defined.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Tank/Facility Closure - After waste removal and water washing, each tank or facility (i.e. evaporator) will be closed. Samples will be taken of the residual waste; a performance evaluation and tank-specific closure module will be developed; and regulatory approval to proceed will be obtained. The tank or facility will then be physically isolated from other tanks/facilities. Each tank will be filled with three different types of grout in distinct layers such that the bottom layer of “reducing grout” will chemically bind residual waste; the middle layer of “controlled low strength grout” will prevent subsidence; and the top layer of “strong grout” will prevent intrusion. All piping and electrical connections will be cut, capped, and sealed to isolate each tank. All openings into each tank will be sealed with “strong grout”. Each tank will be left in a low surveillance/maintenance condition.

- # Waste Removal Operations - complete washing of Tank 8 sludge and transfer to Tank 40.
- # Support completion of the H-Tank Farm electrical and instrument upgrades.
- # Support installation of Tank 7 slurry pumps.
- # Support construction of Tank 11 waste removal facilities.

SR-HL03	1,603	3,099	1,943
-------------------	-------	-------	-------

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL04 / ITP/ESP/LW Operations

This project provides funding for the pre-treatment of liquid 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 (33,800,000 gallons, 480,000,000 curies) has accumulated from past nuclear material production operations at the Savannah River Site. The main long-lived radioactive constituents of this waste are Sr-90, Cs-137, Pu-238, Pu-239, and Pu-241. Extended Sludge Processing pre-treats the sludge portion of tank waste to be processed at Defense Waste Processing Facility into vitrified glass by reducing the aluminum and soluble salt content through an aluminum dissolution step and multiple washing cycles. These facilities are operated remotely to protect personnel from the intense radiation fields from this highly radioactive waste. The In-Tank Precipitation and Late Wash Facilities were expected to pre-treat the salt portion of the high-level waste. Due to technical issues concerning the generation of larger than anticipated amounts of benzene all activities have been suspended. A salt processing systems engineering evaluation is in progress. All known salt processing options will be evaluated against the high-level waste system requirements and the best option will be selected in FY 2000. All monitoring and surveillance activities to maintain the In-Tank Precipitation tanks and facilities in a safe configuration will continue. All activities in support of the High-Level Waste Salt Alternative are funded in SR-HL13, Salt Disposition.

Scope includes: 24 hour surveillance, monitoring, inspection, sampling and maintenance of six 1,300,000 gallon high-level waste tanks with the following systems: Liquid Level Monitoring and Leak Detection; Ventilation and Explosive Gas Monitoring; Temperature Monitoring and Cooling Systems; Remote Inspection of the Tanks and Tank Annuli; 24-hour Manning of the In-Tank Precipitation Control Room; Chemical Addition; Sludge Washing (with 2-3,000,000 gallons of water per year to dissolve the aluminum present in the sludge); Waste Transfers (between tanks as well as to/from H-Tank Farm, and to Defense Waste Processing Facility; includes transfer line integrity testing); Critical Maintenance Activities (predictive, preventive, and

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Extended Sludge Processing

- # Start and complete washing the sludge in Tank 40.
- # Continue to feed Defense Waste Processing Facility from Tank 51 to produce 100 cans.

In-Tank Precipitation

- # Maintain ventilation and explosive gas monitoring.
- # Maintain liquid level monitoring and leak detection.
- # Perform surveillance and maintenance activities as necessary to keep the facility in a safe configuration.

Late Wash

- # Perform surveillance and maintenance activities as necessary to keep the facility in a safe configuration.
- # Major activities are dependent on the results of the salt processing systems engineering evaluation.

SR-HL04	75,233	48,374	58,446
-------------------	--------	--------	--------

<p>Metrics</p> <p>This project has associated corporate performance measures; however, no measures are reportable in the three year budget profile.</p>

SR-HL05 / Vitrification

The Defense Waste Processing Facility project provides treatment to immobilize the Savannah River Site’s liquid high-level radioactive waste in a solid glass waste form, which prevents the waste from leaching to the environment. Approximately 33,800,000 gallons of liquid, high-level radioactive waste are currently stored in 43 underground storage tanks in the F-Tank Farm and the H-Tank Farm. These tanks were designed for interim storage only, and many have already exceeded their intended design life. Most waste operations are conducted remotely, to shield workers from exposure to the intense radiation from Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, Plutonium-241, and other radionuclides in the waste.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The scope within the project includes 24-hour operation of the Defense Waste Processing Facility Vitrification Plant to immobilize high-level radioactive waste in glass including: 24-hour manning of the Defense Waste Processing Facility Control Room; receiving transfers of sludge waste from extended sludge processing; sending transfers of recycle waste to the H-Tank Farm; adjusting and preparing feed for the glass melter; melting the waste into molten glass; pouring the molten glass into stainless steel canisters; inserting and welding canister plugs; decontamination canisters; transporting canisters to the Glass Waste Storage Building; critical maintenance activities (predictive, preventive, and corrective maintenance, equipment troubleshooting, rigging and heavy equipment support, excavations, and facility outage scheduling); and sample analyses to confirm waste glass quality meets Federal Repository requirements.

The Defense Waste Processing Facility will produce 100 canisters of sludge-only waste glass.

SR-HL05	126,864	131,959	126,614
-------------------	---------	---------	---------

Metrics			
High-Level Waste			
Treatment (m ³)	871.0	696.0	348.0
Canisters Produced (m ³)	250.0	200.0	100.0

SR-HL06 / Glass Waste Storage

The Glass Waste Storage Building provides safe interim storage of the highly radioactive, waste glass filled canisters produced by the Defense Waste Processing Vitrification Facility until a Federal Repository is available. This project includes all Glass Waste Storage building activities required to safely store the waste glass canisters, including operations and maintenance of Glass Waste Storage Building #1: 24-hour operation, monitoring, inspection, and maintenance of Glass Waste Storage Building #1 and the highly radioactive waste glass canisters stored there, including operation and maintenance of forced air ventilation systems to remove radioactive decay heat, and monitoring and maintenance of radiation monitors and temperature sensors.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Critical maintenance activities include: predictive, preventive, and corrective maintenance, equipment troubleshooting, and rigging and heavy equipment support.

Continue storage of all vitrified glass canisters poured at the Defense Waste Processing Facility in previous years, plus storage of the 100 sludge-only canisters of vitrified glass projected to be poured at the Defense Waste Processing Facility in the current year.

SR-HL06 324 599 368

Metrics			
High-Level Waste			
Storage (m ³)	320.0	452.0	519.0

SR-HL07 / Effluent Treatment Facility

This project includes all Effluent Treatment Facility activities required to remove the hazardous and low-level radioactive contaminants from the low-level wastewater generated in the F and H Separations and the Tank Farm Areas. This wastewater is processed at the Effluent Treatment Facility until it meets the National Pollutants Discharge Elimination System standards and subsequently released to a permitted outfall. Operation of the Effluent Treatment Facility directly support F- and H-Tank Farms, as well as the Savannah River Site high-level waste vitrification process. It is also required to support F- and H-Area Nuclear Materials Stabilization activities (Projects SR-NM01 and SR-NM02) to meet the Defense Nuclear Facilities Safety Board Recommendation 94-1 commitments.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Effluent Treatment Facility is operated under a South Carolina Department of Health and Environmental Control Waste Water Permit and is required for the Site to meet regulatory requirements for discharge to an outfall. Activities include surveillance and maintenance of a vast wastewater collection system including two 32,000 gallon pumping stations, two 2,000,000 gallon high activity plastic-lined cooling water basins, two 6,000,000 gallon rubber-lined low activity retention basins, and two 450,000 gallon collection tanks. Also included is the operation of a large wastewater treatment plant that includes pH adjustment, micro filtration, ion exchange, organic removal, mercury removal, evaporation and sampling and release of 18,000,000 gallons of treated water per year. The two 2,000,000 gallon basins are reserved to contain a postulated canyon cooling water accident.

Process wastewater as required to support canyon and tank farm operations.

F/H Cooling Water Basins will be relined/repared to address leak detection upgrades.

Complete Digital Control System upgrades for Effluent Treatment Facility operations.

Return Treated Water Tank #1 to service.

SR-HL07	17,900	16,539	17,580
---------------	--------	--------	--------

Metrics

No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL08 / Saltstone

The Saltstone Facility is designed to receive, treat, and dispose of the mixed low-level radioactive liquid salt solution resulting from the In-Tank Precipitation process. Currently, due to technical issues concerning the generation of larger than anticipated amounts of benzene at the In-Tank Precipitation, all activities for that process have been suspended. A salt processing system engineering evaluation is in progress. All known salt processing options will be evaluated against the high-level waste system requirements and the best option will be selected in FY 2000. All monitoring, surveillance and maintenance activities to maintain the saltstone facility in a standby mode will continue until the salt alternative is selected.

Critical maintenance activities include: predictive, preventive, and corrective maintenance, equipment troubleshooting, excavations and grounds maintenance, administration of the paving and heating, ventilation, air conditioning subcontracts, preparation of purchase requisitions and ordering and staging parts and materials; preparation of spare parts data sheets, and facility outage scheduling.

Perform surveillance and maintenance activities, as necessary, to keep the facility in a safe configuration.

SR-HL08	8,096	1,102	1,222
---------------	-------	-------	-------

Metrics			
Low-Level Waste			
Treatment (m ³)	1,283.0	0.0	0.0
On-Site/Commercial Disposal (m ³)	2,052.0	0.0	0.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL12 / High-Level Waste Removal

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 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 salt precipitate feed, provide facility modifications to replace aging service piping and other service utilities on the H-Tank Farm East Hill (this area includes Tanks 38-43, 49-51, Extended Sludge Processing, and the 2H Evaporator) and waste removal equipment for all high-level waste tanks.

The operation required to remove waste from high-level waste tanks and to close those tanks are funded by Project Baseline Summary SR-HL03, Waste Removal Operations and Tank Closure.

Waste Removal

- ▶ Complete construction bid package, award contract and initiate construction on Tank 7.
- ▶ Complete construction and initiate run in and installation of slurry pumps for Tank 11.

These funding levels include line-item construction funding of \$18,220,00 in FY 1998; \$15,214,000 in FY 1999; and \$8,987,000 in FY 2000 for project 93-D-187, High-Level Waste Removal from Filled Waste Tanks.

SR-HL12	23,923	22,874	14,433
---------------	--------	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-HL13 / Salt Disposition

The purpose of this activity is to select, design, construct, and startup the necessary facilities to prepare and treat the salt waste material for processing in the Defense Waste Processing Facility. The failure of the In-Tank Processing Facility identified in January 1998 due to very high levels of benzene production necessitated this major change. A systems engineering team was formed to study all possible alternatives. This resulted in a recommendation to pursue three options with a final selection of a process in late FY 2000. The three options are: Direct Grout, Ion Exchange, and Small Tank In-Tank Processing.

A supplemental Environmental Impact statement will be prepared based on these three options (plus a no action alternative) with a preferred alternative to be selected in late FY 1999. A Record of Decision is planned for late FY 2000.

In conjunction with the National Environmental Policy Act substantial research and development activities, including design and construction of pilot/prototype facilities, will be under taken to demonstrate the ability of these options to meet safety, production, and cost goals. After selection of a preferred alternative additional confirmatory research and development and conceptual design work will take place. Final design and construction will be accomplished and facility startup initiated.

- # Complete supplemental Environmental Impact Statement and issue Record of Decision.
- # Continue research and development activities in hot cell.
- # Continue conceptual design activities.
- # Complete and operate pilot/prototype facilities.

SR-HL13	0	12,983	42,129
---------------	---	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-IN11 / Infrastructure Line-Item

This activity encompasses up-front planning, design, and budget determinations and documentation required to support future infrastructure capital projects and the operating cost funded support needed to execute authorized capital projects.

This project serves a dual function:

- ▶ It is used 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.
- ▶ It is used as 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 Baseline Summary for planning purposes.

Any projects planned for development have been given a preliminary evaluation against Environmental Management risk criteria and are considered to have a strong probability of being supported for further development and/or funded for execution as a critical site need.

Complete up-front planning for the Savannah River Technology Center ventilation upgrade project.

SR-IN11	0	1,274	200
---------------	---	-------	-----

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-IN12 / Operating Projects

Responsibility for these functions are associated with the general concept of “Landlord” functions and 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 the 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 right, 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.

Requested infrastructure support for the Department of Energy’s direct Savannah River Site activities. Such support includes telephone systems, computer support, and access to the site network, site radios, transportation, waste hauling, janitorial services, support for the Department of Energy procurements, printing and document reproduction services.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Capital Equipment and General Plant Projects designated as necessary for safe storage of nuclear radioactive materials and those that are regulatory required that have been postponed from FY 1999 and earlier will be initiated and/or completed.
- # Capital Equipment and General Plant Projects designated as "Infrastructure Core" activities that have been deferred from FY 1999 and earlier will be initiated and/or completed.
- # Capital Equipment Projects to be funded include: replace In-Cell Crane, 773-A IH/Radcon portable monitoring equipment, replace HVAC Units in 710-17N, replace obsolete TLD System, replace environmental lab equipment, ALD core analytical instrument replacement, and replace Isokinetic System Gas Chromatographs.
- # General Plant Projects to be funded include: F-Area Retention Basin, A-01 Outfall Constructed Wetlands, Mini-Melter, 786-A, replace culvert at Central Shop, Replacement of B-Wing hood exhaust, 773-A, replace six obsolete distribution panels, 772-F, and replace B-Area well hunter.

SR-IN12	10,207	18,246	32,693
---------------	--------	--------	--------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

**SR-SF01-LT / K-Reactor Spent Nuclear Fuel Project
(Post 2006)**

The K-Reactor 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.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

A mission for interim storage of special nuclear material from the Department of Energy Rocky Flats Field Office has been added to the scope of the K-Reactor project. With addition of this mission, the K-Reactor 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 requires this project baseline summary to be moved from the Site/Project Completion account to the Post 2006 Completion account in FY 2000. The FY 1998 and FY 1999 associated funding levels are \$29,393,000 and \$25,845,000, respectively.

- # Continue surveillance and maintenance, basin operations, and heavy water and highly enriched uranium surveillance.
- # Disposition of tritium material located in K-Basin is expected.
- # Maintain High Activity Moderator in standby, operated as necessary until completion of the heavy water program.
- # Begin receipt of plutonium metal from Rocky Flats.

SR-SF01-LT	0	0	33,410
------------------	---	---	--------

Metrics			
Spent Nuclear Fuel Stabilized			
In-Stabilization Process / Not Stabilized (m ³)	0.0	0.0	7.5
In-Stabilization Process / Not Stabilized (MTHM)	0.0	0.0	0.9

SR-SF02 / L-Reactor Spent Nuclear Fuel Project

The purpose of the L-Reactor Spent Nuclear Fuel project is to control the water quality where fuel rods are stored and to carry out all activities that apply to fuel handling, storage, and shipping to other facilities. The L-Area contains the 105-L Reactor Building (1,000,000 square feet) along with support facilities. Inside the 105-L Reactor Building is the disassembly basin, which stores the Savannah River spent nuclear fuel and will be used to store spent nuclear fuel from off-site research reactors. The L-Reactor disassembly area includes equipment to control basin water quality for the storage of spent nuclear fuel. The basin walls are below ground and are thick steel-reinforced concrete. The basin contains approximately 3,500,000 gallons of water and varies in depth from 17 to 30 feet.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Continue safe storage of Foreign Research Reactors/Domestic Research Reactor fuel. Continue facility surveillance and maintenance activities.
- # Commence the deinventory of the Savannah River reactor spent nuclear fuel (ship Mark 16 and 22 fuel to H-Canyon) as mandated in the Defense Nuclear Facilities Safety Board Recommendation 94-1.
- # Continue storage of heavy water inventory until disposition is determined.
- # Projected receipts for Receiving Basin for Off-site Fuels and L-Basin combined:
 - ▶ 40 casks of foreign research reactor fuel;
 - ▶ 13 casks of domestic research reactor/Department of Energy fuel;
 - ▶ 12 casks high flux induction reactor fuel, for a total of 65 casks; and
- # Projected receipts are for planning purposes only. These projections change due to numerous conditions beyond the control of the Department of Energy or the management and operating contractor.
- # In addition to this funding, the Department's Cost of Work for Others Program will include \$11,478,000 in FY 1998; \$12,500,000 in FY 1999; and \$9,700,000 in FY 2000 of equal budget authority to support receipts for the foreign research reactor receipt program implementation at both the L-Reactor and the Receiving Basin for Offsite Fuels.

SR-SF02	20,108	31,826	36,187
---------------	--------	--------	--------

Metrics			
Spent Nuclear Fuel			
Stable, Not Disposition-Ready (m ³)	8.1	18.3	23.6
Stable, Not Disposition-Ready (MTHM)	0.8	2.1	2.7
In Stabilization Process / Not Stabilized (m ³)	17.1	17.0	17.0
In Stabilization Process / Not Stabilized (MTHM)	2.7	2.7	2.7
Made Disposition-Ready During Period (m ³)	0.0	0.1	0.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-SF03 / RBOF Spent Nuclear Fuel Project

The Receiving Basin for Offsite Fuel spent nuclear fuel project includes: basin operations in Receiving Basin for Offsite Fuel to control the water quality where fuel rods are stored, reactor deionizer regeneration, administrative programs like SIRIM 9B reporting requirements, and all activities that apply to fuel receipt, handling, storage, and shipping to other facilities.

The fuel rods have been irradiated and are being stored until a final disposition is approved. There are certain casks that Receiving Basin for Offsite Fuel can handle directly that L-Basin cannot, such as the TN7. A minimal number of on-site shipments from Receiving Basin for Offsite Fuel to L-Basin are needed to conserve Receiving Basin for Offsite Fuel space reserved for those fuels and casks that can only be handled in Receiving Basin for Offsite Fuel. Spent nuclear fuel will begin to be transferred to the Transfer Treatment and Storage Facility for interim storage in FY 2005 assuming that the facility is available for receipts at that time. The Receiving Basin for Offsite Fuel and L-Basin will be capable of handling combined receipts of foreign and domestic reactor spent nuclear fuel at an average of up to seven casks per month between FY 1998 and FY 2005.

- # Continue surveillance and maintenance and basin management activities to maintain water quality enabling the safe receipt and storage of spent nuclear fuel and ensuring that the facility continues to pose acceptable risk to the environment, site workers, and the general public. The facility will continue to be maintained in accordance with the safety basis requirements with cost effective management, planning, and oversight.
- # Projected receipts of offsite fuel (Receiving Basin for Offsite Fuel and L-Basin combined) for FY 2000 will be:
 - ▶ 40 casks of Foreign Research Reactor fuel;
 - ▶ 13 casks of Domestic Research Reactor/Department of Energy fuel; and,
 - ▶ 12 casks high flux induction reactor DOE Oak Ridge fuel, for a total of 65 casks.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Projected receipts are for planning purposes only. These projections change due to numerous conditions beyond the control of the Department of Energy or the management and operations contractor. Pending the National Environmental Protection Agency determination, it is assumed that the Savannah River Site Spent Nuclear Fuel Environmental Impact Statement Record of Decision will direct Receiving Basin for Offsite Fuel to deinventory “problematic” fuel as defined in the Research Reactor Task Team Report to F- or H-canyon for processing starting in FY 1999/2000. This consists of metallic uranium fuels (EBRII/SRE), oxide target materials, and failed and sectioned fuels (listed in table 5.2-1 of the RRTTR). The Receiving Basin for Offsite Fuel refurbishment capital equipment/general plant project will commence upgrades to the facility and its system. Specific accomplishments will include reactor and Receiving Basin for Offsite Fuel deionizer regeneration.

Some spent nuclear fuel can be moved from Receiving Basin for Offsite Fuels to the L-Reactor basin to optimize Receiving Basin for Offsite Fuels and L-Basin space to support future spent nuclear fuel receipts. One shift of operators will be eliminated at the Receiving Basin for Offsite Fuels based on a transfer of fuel receipts to the L-Reactor.

SR-SF03 19,155 18,206 11,773

Metrics			
Spent Nuclear Fuel			
Stable (m ³)	20.1	22.3	24.1
Stable (MT)	21.1	21.4	21.6
In Stable Process / Not Stabilized (m ³)	35.1	35.1	35.1
In Stable Process / Not Stabilized (MTHM)	19.0	19.0	19.0

SR-SF04-LT / Heavy Water D-Area (Post 2006)

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

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

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 places the Heavy Water program into the Post 2006 Completion account in FY 2000.

- # Continue heavy water re-work operations through December 2000 and Dupont Water through June 2000 to process identifiable inventory.
- # Operate Moderate Purification Facility and Technical Purification Facility as required according to the Moderator Management Plan for inventory processing.
- # The above activities will be modified if a contract to sell the heavy water is promulgated in FY 1999.
- # Finalization of planning for FY 2001 deinventory and demobilization of D Area, including plans for such items as construction drying of towers, Technical Purification Facility/Moderator Purification Facility lay up, line drying and heavy water shipping.

SR-SF04-LT	0	0	4,984
------------------	---	---	-------

Metrics No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-SF09 / Spent Nuclear Fuel Treatment and Storage

The Department of Energy has responsibility for receipt and storage of a substantial quantity of aluminum-based research reactor spent nuclear fuel at the Savannah River Site over the next 40 years. Based upon the 1996 Research Reactor Spent Nuclear Fuel Task Team Report recommendation and the Foreign Research Reactor Environmental Impact Statement Record of Decision, new services will be required for receipt, characterization, conditioning, packaging and dry storage of spent nuclear fuel pending ultimate disposal. To implement the preferred alternative in the Savannah River Site Spent Nuclear Fuel Management Environmental Impact Statement (Melt and Dilute Process), the Department of Energy would construct a melt and dilute facility in the existing 105-L Reactor Building at the Savannah River Site and would build a dry-storage facility in L-Area near the 105-L Reactor Building. The proposed Treatment and Storage Facility will include remote handling and heavy lifting (cask handling) capability, hot cells, and retrievable dry storage space for spent nuclear fuel assemblies. The mission of the Treatment and Storage Facility will be to prepare the spent nuclear fuel for interim dry storage in a "road-ready" form for shipping to and ultimate disposal in a Nuclear Regulatory Commission licensed geologic repository.

Significant development work and independent reviews have been conducted over the past three years to better define and understand the proposed project. For example, technology development is nearing completion having been validated through bench scale and small testing using surrogate materials. The concept has also been validated by third party small scale testing (Argonne National Laboratory) using irradiated samples. Through a Memorandum of Understanding with the Savannah River Site, the Nuclear Regulatory Commission is conducting an on-going review of the research and development results to ensure that any technical issues are identified and addressed early in the process. In a June 1998 letter report, the Nuclear Regulatory Commission concluded that melt and dilute would be an acceptable concept for geologic disposal of aluminum-based spent nuclear fuel. As final proof-of-concept, Savannah River is

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Spent Nuclear Fuel Treatment and Storage Facility is to provide for the receipt and storage of approximately 30,000 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 the next 40 years.

A design-only line-item construction project to develop detailed design for the Spent Nuclear Fuel Treatment and Storage Facility will be initiated. The facility would be built under a subsequent line-item in FY 2003. Preliminary and final design (Title I and Title II) of the project will be initiated, including vendor supplied engineered equipment design technology. The design process will be accomplished in two parts: non-process related (interim dry storage modules and support utilities) which will begin in early FY 2000, and melt and dilute process design integration into the 105-L facility - which will begin later in the fiscal year with input from the L-Area pilot demonstration as discussed above. Both design efforts will be integrated into validating/baselining the FY 2003 construction project.

These funding levels include design only line-item construction funding of \$7,000,000 in FY 2000 for project 00-D-401, Spent Nuclear Fuel Treatment and Storage Facility.

SR-SF09	950	1,455	11,500
---------------	-----	-------	--------

Metrics

No quantifiable corporate performance measures are associated with this project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-SW01 / Consolidated Incinerator Facility

The Consolidated Incinerator Facility provides the Savannah River Site the capability for safe treatment, by incineration, of combustible, low-level radioactive wastes, hazardous wastes, and mixed wastes (those containing both hazardous and radioactive constituents). These wastes are received at the Consolidated Incinerator Facility for incineration as either liquids or solids. The facility is operated in accordance with the South Carolina Hazardous Waste Management Regulations, and the Resource Conservation and Recovery Act. Operation of the Consolidated Incinerator Facility will contribute to implementation of the Savannah River Site Treatment Plan (WSRC-TR-94-0608), which established the requirement for the Consolidated Incinerator Facility to treat specified mixed waste streams in accordance with the Federal Facility Compliance Act.

Waste incineration is regulated by state and Federal agencies and is a well-established means of destroying or reducing the volume of hazardous materials. Waste treatment by incineration at the Consolidated Incinerator Facility achieves a waste destruction efficiency of not less than 99.99 percent. Ash produced by the combustion process, as well as blowdown from off-gas treatment processes, is stabilized by solidification and transferred to either a Resource Conservation and Recovery Act licensed storage facility or to a hazardous/mixed waste disposal facility depending on its Resource Conservation and Recovery Act designation, each of which is managed in accordance with the Environmental Protection Agency Land Disposal Restriction regulations.

During its designed service life of 30 years, the Consolidated Incinerator Facility will incinerate approximately 1,000,000 pounds of solid waste and 1,000,000 pounds of liquid waste each year. Waste streams processed will include:

- ▶ Low-level solid waste from several on-site sources;
- ▶ Low-level radioactive liquid waste (aqueous and organic);
- ▶ Liquid radioactive organic waste (benzene from the Defense Waste Processing Facility);
- ▶ Hazardous and mixed solid wastes from several on-site facilities; and

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- ▶ Hazardous and mixed liquid wastes (aqueous and organic including solvent material from past and present canyon operations.

The facility will continue incinerating waste during steady-state operations to support the Site Treatment Plan.

Capital equipment and general plan projects will be initiated, as necessary.

SR-SW01 24,873 23,255 26,045

Metrics			
Mixed Low-Level Waste			
Treatment (m ³)	853.0	809.0	760.0
Storage (m ³)	0.0	149.0	149.0
Low-Level Waste			
Treatment (m ³)	0.0	1,422.0	0.0

SR-SW02 / Transuranic Waste Project

As a result of nuclear materials production in the Department of Energy complex, the Savannah River Site currently stores approximately 11,000 m³ of waste contaminated with transuranic isotopes. An estimated 10,000 m³ is expected to be generated through FY 2028. A portion, approximately one-third by volume of the legacy waste managed as transuranic waste, is estimated to have an activity level of less than 100 nCi/g and could be dispositioned as low-level waste or as mixed low-level waste with proper characterization.

The goal of the Transuranic Waste project is to properly characterize the waste to segregate the low-level waste and mixed low-level waste from the transuranic inventory, perform the necessary processing/treatment to meet the appropriate low-level/mixed low-level waste disposal criteria, and to certify and dispose of all transuranic and mixed transuranic waste at the Waste Isolation Pilot Plant in New Mexico.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The project has the following objectives:

- ▶ Transuranic Waste Storage Pad Base Operations, which include
 - S Receipt and storage of newly generated waste;
 - S Inspection and maintenance of transuranic waste storage pads and transuranic waste containers; and
 - S The removal of earthen cover and retrieval of 8,809 55 gallon drums on five transuranic waste storage pads.
- ▶ The Low-Level Waste Disposition initiative, which provides for the disposal of approximately one thousand 55 gallon drums of low-level waste formally managed as transuranic waste.
- ▶ The Transuranic Waste Drum Segregation initiative, which provides for assays drums of waste to segregate transuranic waste from low-level waste and to segregate mixed transuranic waste from mixed low-level waste. Initial efforts involve:
 - S The Repackaging Initiative, which provides for the disposal of approximately 200 waste containers. These containers consist of used high-efficiency particulate air filters that can be certified as low-level waste following assay. Repackaging is necessary for disposal efficiency and fire prevention reasons.
 - S The Ship to the Waste Isolation Pilot Plant Initiative, which provides for the necessary characterization, certification, and transportation systems to support the initial Savannah River Site shipments of transuranic waste to the Waste Isolation Pilot Plant. These systems will be used until the Transuranic and Mixed Waste Containment Building (future line-item) can be designed and constructed.
 - S The Mixed Low-Level Waste Disposition Plan, which investigates the feasibility of sending waste to the Consolidated Incineration Facility, or to another Department of Energy facility as identified through the Environmental Management Integration effort.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

S The Pu-238 On-Site Disposal Initiative, which evaluates the possibility of expanding disposal performance assessments at the Savannah River Site to determine if Pu-238 contaminated waste can be safely disposed on-site.

- # Maintain existing inventory in a safe configuration.
- # Make ready first three shipments of Savannah River transuranic waste for shipment to the Waste Isolation Pilot Plant.
- # Receive and store newly generated transuranic waste.
- # Continue venting of drums stored on pads.

SR-SW02 9,220 13,991 10,602

Metrics			
Transuranic Waste			
Storage (m ³)	10,837.0	11,527.0	11,616.0
Ship to DOE Disposal Site (m ³)	0.0	44.0	35.0

SR-SW03 / Mixed Low-Level Waste Project

The mixed 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, and construction. Due to the lack of mixed waste treatment facilities within the Department of Energy complex and the commercial sector, the vast majority of these waste streams have been in storage well in excess of one year, and do not meet the intent of the Land Disposal Restrictions regulations, i.e. has not been treated within 1 year of its Accumulation Start Date. As a result, the Savannah River Site has entered into a compliance agreement (Consent Order, 95-22-HW) with the South Carolina Department of Health and Environmental Control concerning the treatment of these waste streams. This compliance agreement requires implementation of the Savannah River Site Treatment Plan.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The mixed waste project will be managed with the overall goal of achieving full Resource Conservation and Recovery Act LDR compliance such that there is no legacy or newly generated mixed waste stored within the Savannah River Site mixed waste facilities for longer than one year. This will be accomplished by either developing or identifying appropriate treatment methods to meet the commitments of the Site Treatment Plan and also developing and/or identifying appropriate disposal alternatives for the final disposition of the treated mixed waste.

Three key activities in the management of the various mixed waste streams are storage, treatment (including any characterization activities required prior to treatment), and disposal. A breakdown of these activities is provided below:

Mixed Waste Receipt and Storage activities Include:

- ▶ Receipt of newly generated waste;
- ▶ Verification that the waste meets the facility waste acceptance criteria; and
- ▶ Placement of the waste in storage and the surveillance and maintenance of the stored waste.

Waste treatment activities are conducted to treat the waste prior to disposal to ensure that the requirements of Resource Conservation and Recovery Act and the Federal Facility Compliance Agreement of 1992 are met. These activities include:

- ▶ Characterization and preparation for the Consolidated Incinerator Facility treatment of a large portion of the legacy waste; and
- ▶ Characterization and preparation of non-Consolidated Incinerator Facility waste streams for off-site shipment and treatment.

Disposal of treated mixed waste activities includes:

- ▶ Identifying the most equitable and best technical location for disposal of all the Savannah River Site mixed waste inventory; and,
- ▶ Characterizing, preparing, and shipment of treatment residuals for disposal.

Continue storage operations for various mixed waste streams.

Continue decontamination of low-level waste lead.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Continue operations of New Solvent Storage Tanks.
- # Submit an annual update to the Site Treatment Plan.
- # Complete the mixed waste facility upgrade project.
- # Treat and dispose of small quantities of mixed low-level waste.

SR-SW03 2,854 4,994 5,845

Metrics			
Mixed Low-Level Waste			
Treatment (m ³)	282.0	32.0	35.0
Storage (m ³)	867.0	695.0	1,011.0
On-Site/Commercial Disposal (m ³)	0.0	0.0	50.0

SR-SW04 / Low-Level Waste Project

The 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, and construction. Also, the Savannah River Site receives low-level waste from the Naval Reactors program and off-site generators for disposition.

Low-level waste is segregated into five categories to facilitate proper treatment, storage, and disposal. These categories are: 1) low-activity waste; 2) intermediate-level non-tritium waste; 3) intermediate-level tritium waste; 4) long-lived waste; and 5) suspect soil.

The low-level waste project will be managed with the overall goal of treatment and disposal such that there is no legacy stored waste and there is capability and capacity to cost effectively treat and/or dispose of newly generated wastes. This will be accomplished by identifying and either developing or contracting appropriate treatment and disposal technologies where present capabilities are not adequate.

- # Continue storage operations for various low-level waste streams, utilizing on-site facilities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Provide reduced level of treatment and disposal sufficient to maintain storage level at a constant level. No backlog will be processed.

Continue operation of the waste sorting facility.

Continue the design of new disposal units.

SR-SW04 8,602 12,150 9,947

Metrics			
Low-Level Waste			
Treatment (m ³)	6,117.0	9,995.0	3,795.0
Storage (m ³)	18,040.0	14,854.0	14,525.0
On-site / Commercial Disposal (m ³)	2,371.0	9,576.0	3,235.0

SR-SW05 / Hazardous Waste Project

The hazardous waste project will involve: receipt from site generators, storage, and ultimate shipment off-site of newly generated hazardous wastes for treatment and disposal.

Hazardous waste is currently stored on-site, and treated either off-site at a commercial facility or on-site at the Consolidated Incinerator Facility. All legacy hazardous waste will be shipped off-site for disposal, by the year 2002, and will result in a steady-state operation thereafter.

Continue treatment, storage, and disposal of hazardous waste operations, utilizing on-site and off-site facilities.

Continue implementation of the Hazardous Waste Off-site Shipment Release program.

Continue reduction of legacy hazardous waste at a reduced level.

Continue efforts to allow radioactive polychlorinated biphenyl waste to be shipped to Oak Ridge for treatment.

SR-SW05 5,468 4,901 3,971

Metrics			
Hazardous Waste			
On-site / Commercial Disposal (MT)	482.0	816.0	523.0

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

SR-SW06 / Sanitary Waste Project

This project provides for the safe, 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, verification that the waste meets the commercial disposal facility waste acceptance criteria, radiological screening and contract administration. These activities are necessary to ensure compliance with the South Carolina Solid Waste Regulation R61-107.258 and DOE Order 5820.2A.

Sanitary waste is currently being disposed at the regional Three Rivers Landfill located adjacent to the Savannah River Site. The Resource Conservation and Recovery Act closure activities at the on-site Interim Sanitary Landfill were completed in FY 1999 and normal sanitary waste operations are expected in FY 2000, which includes continued and increased operations for the "Green-Is-Clean" Shredder.

Continue disposal of sanitary waste utilizing the regional Three Rivers Landfill.

Dispose of approximately 25 tons per day of sanitary waste.

SR-SW06	1,747	2,068	2,156
---------------	-------	-------	-------

<p>Metrics</p> <p>No quantifiable corporate performance measures are associated with this project.</p>
--

SR-SW07 / Pollution Prevention

Pollution prevention is the Savannah River Site preferred approach to reducing waste, mitigating health risks, and protecting the environment. Pollution prevention applied at the Savannah River Site can significantly reduce secondary wastes, allowing the cost savings to be used to accelerate the cleanup effort. As in industry, pollution prevention is a core program that helps the Savannah River Site achieve maximum environmental benefits.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Waste Minimization/Pollution Prevention Management program will provide the Savannah River Site the safe, effective, and environmentally responsible Waste Minimization Program strategy to implement specific waste reduction techniques based on current and projected information on waste generation, waste characterization, and ultimate waste disposal costs.

- # Continue site program management, including national and site reporting and monitoring.
- # Continue focus on contamination area rollback.
- # Develop and implement enhancements in chemical management, including pharmacy concept.
- # Continue second sort capabilities (SMARTS components).
- # Continue administering set aside fee program, including invoices, reporting support.
- # Implement sanitary waste processing at the Material Recovery Facility.

SR-SW07	4,679	1,710	1,122
---------------	-------	-------	-------

Metrics No quantifiable corporate performance measures are associated with this project.

Total, Savannah River	<u>710.155</u>	<u>733.031</u>	<u>824.864</u>
-----------------------------	----------------	----------------	----------------

Explanation of Funding Changes from FY 1999 to FY 2000

 FY 2000 vs.
 FY 1999
 (\$000)

HQNP-SI01-LT-SR / Security Investigations

No significant change. -4

SR-DO02 / WSI Landlord Project

No significant change. 100

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

Increase in FY 2000 funding provides for improved support of the natural resource management program. 659

SR-DO04 / Ecology Lab Project

No significant change. 188

SR-DO05 / DOE External Program Support

No significant change. -5

SR-DO07 / DOE Program Support

Decrease in FY 2000 reduces funding for grants and other Department of Energy mandated programs. -3,715

SR-ER01 / Flood Plain Swamp Project

Decrease in funding reduces number of vapor extraction units at TNX subprojects. -2,370

SR-ER02 / Four Mile Branch Project

Increase cost of operation at the F and H groundwater remediation facility and requirements for interim action at the mixed waste management facility. 10,239

SR-ER03 / Lower Three Runs and Operations Project

Additional funds provide for assessment and remediation work on five subprojects designated in the Federal Facility Agreement. 6,466

SR-ER04 / Pen Branch Project

Begin remedial action on the K-Area hazardous material unit 131-K subproject. 2,118

FY 2000 vs. FY 1999 (\$000)

SR-ER05 / Steel Creek Project

The decrease in funding reduces the field monitoring and assessment workscope. . . -4,135

SR-ER06 / Upper Three Runs Project

Several remediation subprojects were completed including the A/M Area Groundwater subproject; and the Savannah River Laboratory Seepage Basin subproject. -4,236

SR-ER07 / Program Management

Increased funding for environmental compliance support sub-activities at waste sites and groundwater remediation projects. 1,970

SR-FA02 / F-Canyon Deactivation Project

No significant change. 15

SR-FA16 / F-Area Monitoring

Reduced funding due to achieving a deactivated/minimum surveillance and maintenance condition for the Naval Fuels Facility (Building 247 and associated support facilities) with no additional deactivated facilities to be added until at least after the completion of F-Canyon/FB-Line nuclear materials stabilization activities in approximately FY 2003. -294

SR-FA17 / H-Area Monitoring and Minor Facility Monitoring

A new facility creates an increase in funding to cover surveillance and maintenance of the reactor heat exchange repair shop. 1,949

SR-FA18 / M-Area Monitoring Project

Decrease reflects reduces support for deactivation activities. -3,016

SR-FA19 / D-Area Monitoring Project

Increase in funding provides for monitoring of the excess Heavy Water Production Facility. 1,261

FY 2000 vs. FY 1999 (\$000)

SR-FA20 / Reactors Monitoring Project

Provides increased support for monitoring reactor facilities and operation of the C-Area Decontamination Facility, as well as initiation of preliminary deactivation planning. 3,485

SR-HL01 / H-Tank Farm

Decrease reflects the completion of RHLWE in FY 1999 and re-allocation of labor charges to F-Tank Farm for labor and activities that should have been in the F-Tank Farm project baseline summary. -3,665

SR-HL02 / F-Tank Farm

In FY 1999 F-Tank Farm labor incorrectly assigned to H-Tank Farm; corrected in FY 2000. 3,258

SR-HL03 / Waste Removal Operations and Tank Closure

Tank closure design efforts are reduced concurrent with the slow down of waste removal activities. -1,156

SR-HL04 / ITP/ESP/LW Operations

Additional surveillance and maintenance activities (including design and engineering) for the In-Tank Precipitation and Late Wash facilities. 10,072

SR-HL05 / Vitrification

Canister production is reduced from 200 canisters to 100 canisters. -5,345

SR-HL06 / Glass Waste Storage

Fewer canisters will be placed in storage and critical maintenance activities are reduced to minimum safe levels. -231

SR-HL07 / Effluent Treatment Facility

Funds additional maintenance activities at the Effluent Treatment Facility/Consolidated Incinerator Facility. 1,041

FY 2000 vs. FY 1999 (\$000)

SR-HL08 / Saltstone

Saltstone operations in standby condition awaiting high-level waste salt alternative decision. Will process a minimal amount of waste from the Effluent Treatment Facility. 120

SR-HL12 / High-Level Waste Removal

Decreased funding reflects stretch-out of the construction schedule to balance all priorities within the High-Level Waste Program. -8,441

SR-HL13 / Salt Disposition

Increase in funding provides for design and construction of pilot/prototype facility. 29,146

SR-IN11 / Infrastructure Line-Item

Decrease reflects reduced support for future infrastructure construction line-item project planning. -1,074

SR-IN12 / Operating Projects

Increase funding required because of unavailability of prior year funds to support DOE Federal employees onsite. Support increased requirements for critical regulatory capital projects deferred from prior years. 14,447

SR-SF01-LT / K-Area Spent Nuclear Fuel Project (Post 2006)

Increase, in part, due to transfer of the project from the Site/Project Completion account due to longer term mission of storing Rocky Flats plutonium. Also, increase supports first year of receipts from Rocky Flats. 33,410

SR-SF02 / L-Reactor Spent Nuclear Fuel Project

Increase in funding due to shipping Mark 16 and 22 fuel to the canyons. 4,361

SR-SF03 / RBOF Spent Nuclear Fuel Project

Decrease reflects reduction in one shift of basin operators based on transfer of fuel receipts to the L-Reactor. -6,433

SR-SF04-LT / Heavy Water - D-Area (Post 2006)

Increase reflects the transfer of the project from the Site/Project Completion account due to potential sale of heavy water and long-term storage of heavy water. 4,984

FY 2000 vs. FY 1999 (\$000)

SR-SF09 / Spent Nuclear Fuel Treatment and Storage Project

# Funding will support initiation of a design only line-item construction project for detailed of the Spent Nuclear Fuel Treatment and Storage Facility.	10,045
--	--------

SR-SW01 / Consolidated Incinerator Facility

# Funding increase supports processing of solvent waste.	2,790
--	-------

SR-SW02 / Transuranic Waste Project

# Operations to provide safe storage, minimal treatment and certification activities associated with sending shipments to the Waste Isolation Pilot Plant.	-3,389
--	--------

SR-SW03 / Mixed Low-Level Waste Project

# Funding increase due to termination of waste chargeback demonstration and continued support for completion of the Mixed Waste Facility Upgrade Project. . .	851
---	-----

SR-SW04 / Low-Level Waste Project

# Decrease reflects reduced treatment and disposal activities for legacy waste volumes.	-2,203
---	--------

SR-SW05 / Hazardous Waste Project

# Decrease reflects reduced disposal activities.	-930
--	------

SR-SW06 / Sanitary Waste Project

# Increase supports continued operation of the "Green-Is-Clean" shredder.	88
---	----

SR-SW07 / Pollution Prevention

# Decrease reflects postponement of high return-on-investment projects.	-588
---	------

Total Funding Changes, Savannah River	<u>91,833</u>
---	---------------

Major Issues

- # The production output from the Defense Waste Processing Facility will be restricted to 100 canisters in FY 2000 (and FY 2001) attributable to reduced availability of feed materials from the High-Level Waste tanks due to a slow down in waste removal activities. This slow down in waste removal activities is due to two major reasons: first, a redirection of funding away from waste removal (SR-HL12) to provide additional funding for the salt alternatives (SR-HL13), and the need to slow down the can production rate to allow match up between the sludge feed stream and salt feed stream to minimize lifecycle canister production.

Multi-Site

Mission Supporting Goals and Objectives

Mission

The mission of the Defense Environmental Management Post 2006 Completion account carried out by the Multi-Site programs includes funding to provide leadership and support, establish and implement National and Departmental policy, conduct analyses and integrate activities across a number of sites. The majority of the funds requested in the Multi-Site activities defense account are required for the Federal contribution to the Uranium Enrichment Decontamination and Decommissioning Fund (83 percent). Other Multi-Site activities budget efforts consist of Headquarters technical support activities, Environmental and Regulatory Analysis activities, Transportation and Packaging functions, Emergency Preparedness activities, National Analytical Management Program activities, and Pollution Prevention program functions.

This activity also includes the required Federal Government deposit to the Uranium Enrichment Decontamination and Decommissioning Fund. The Energy Policy Act of 1992 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 \$420,000,000 (in FY 2000) was authorized to come from annual appropriations.

Program Goal

The goals of the Multi-Site activities will allow the Environmental Management (EM) to better coordinate EM-wide and the Department of Energy (DOE)-wide program efforts and avoid overlaps and inconsistencies.

The main goal of EM's Tribal program, within the Policy and Management Program, is to fully implement DOE's American Indian Policy. The EM maintains cooperative agreements with ten Tribal nations in order to enhance their direct involvement in clean 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. In order to fulfill EM's goal, the program seeks to maintain and, in some instances, increase funding for the cooperative agreements with Tribal nations directly affected by EM's cleanup activities.

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 Nation's former nuclear weapons complex.

The principal means by which this goal is accomplished are 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 National Transportation Program develops and maintains DOE's baseline transportation resources, including policy, to assure the availability of safe, regulatory compliant, economical, efficient, and timely transportation for DOE materials, including radioactive and other hazardous materials and wastes. Goals for achieving an integrated program mission include: achieving a forward-looking, system-wide assessment of the Department's transportation and packaging needs; assuring safe, environmentally compliant, and cost effective transportation management system and operations; performing as a service center for transportation campaigns across the Department's complex; focusing expertise from the Department's transportation and packaging technical base program to solve transportation and packaging requirements needs; and enhancing transportation relationships and coordinating transportation communication throughout the Department.

The goal of EM's Emergency Management Program is to assist the National Fire Protection Association in the development of a national standard for training requirements for radioactive materials for hazardous materials teams and emergency medical staff. In coordination with the Office of Emergency Management (NN-60), this program will coordinate field reviews of EM facilities to assure compliance with DOE Order 151.1 and their preparedness and readiness to address emergencies.

Full implementation of the Transportation Emergency Preparedness Program at the eight DOE Regional Coordinating Offices will begin under the Emergency Preparedness Program.

The mission of the National Analytical Management Program is to insure that the analyses performed by the analytical laboratories within the EM Complex are of sufficient quality to: meet the needs and requirements of the EM and the regulatory community; to be scientifically and legally defensible; to provide the basis for returning the DOE environment to the public domain; and to assist in meeting the objectives of the *Accelerating Cleanup: Paths to Closure* plan. To support this mission, the following goals have been established:

- Establishment of an Analytical Laboratory Accreditation Program for all laboratories doing business with the DOE/EM;
- Increase data reliability and defensibility by implementing a program to provide traceability for all Reference Laboratories to the National Institute of Standards and Technology;
- Increase the quality and reliability of the analytical data by implementing a common electronic reporting format;
- Establishment of a comprehensive informational database to identify baseline information for the EM analytical services; and

- Decrease costs for analytical services by sharing laboratory audit information.

The National Pollution Prevention Program funds Departmental Headquarters and field activities. The missions of the Pollution Prevention Program are to: 1) comply with waste minimization, pollution prevention, affirmative procurement, and recycling requirements under Federal/state statutes, Executive Orders, and DOE Orders; and 2) reduce waste generated through implementation of cost effective pollution prevention projects.

These funds will allow the Department to meet the Secretary of Energy's pollution prevention goals to be achieved by December 31, 1999, as stated below:

- Reduce by 50 percent the generation of radioactive waste
- Reduce by 50 percent the generation of hazardous waste
- Reduce by 50 percent the generation of low-level mixed waste
- Reduce by 33 percent the generation of sanitary waste
- Recycle 33 percent of sanitary waste from all operations
- Increase procurement of Environmental Protection Agency designated recycled products to 100 percent, except where they are not commercially available at a reasonable price or do not meet performance standards

The Department of Energy achieved the 50 percent reduction goals for radioactive, hazardous, and low-level mixed waste from routine operations at the end of FY 1997. In addition, the Department met the recycling goals of 33 percent in 1997. Additional effort will be required to meet the affirmative procurement goals. The Department has established an additional goal to reduce wastes from cleanup and stabilization activities by 10 percent annually, beginning in FY 1999 and will strive to further reduce its waste through continuous improvement in future years.

The White House plans to consolidate, streamline, and tighten the existing Executive Orders and policy memoranda into four new Executive Orders. The first of these new Orders, Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition, was issued on September 16, 1998. Executive Order 13101 contains requirements in previous Orders and new requirements to reflect the President's environmental agenda. The other Executive Orders are expected before summer.

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.

Performance Measures

There are no Performance Measures associated with the Multi-Site activities.

Significant Accomplishments and Program Shifts

Policy and Management

- # Improve analytical capabilities for and conduct comparative life-cycle analyses for EM programs and projects (FY 1998/FY 1999/FY 2000).
- # Provide general analytic and production support to national environmental policy development (FY 1998/FY 1999/FY 2000).
- # Continue providing for EM-wide information management infrastructure activities and provide for hardware, software, maintenance, and upgrades to support management information systems (FY 1998/FY 1999/FY 2000).
- # 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 1998/FY 1999/FY 2000).
- # Continue to implement training and education programs to resolve the Defense Nuclear Facilities Safety Board Recommendation 93-3 (FY 1998/FY 1999/FY 2000).

Complex-Wide Waste Management Support and Analyses

- # Issue the Waste Management Programmatic Environmental Impact Statement Records of Decision for Transuranic Waste Storage and Treatment and Hazardous Waste Treatment; continue to work with sites and external stakeholders to resolve issues related to the configuration of the waste management system and to support issuance of Records of Decision for high-level waste storage and low-level waste and mixed low-level waste treatment and disposal based upon the Waste Management Programmatic Environmental Impact Statement (FY 1998/FY 1999/FY 2000).
- # Develop and refine disposition maps to show the planned pathways to move waste or materials from inventory or generation through required processing to treatment or stabilization and on to final disposition; conducted integrated planning efforts to identify and evaluate opportunities to reduce risk and long-term mortgages associated with treatment and disposal of backlog waste (FY 1998/FY 1999/FY 2000).
- # Issue and continue support to implement DOE Order 435.1, Radioactive Waste Management (FY 1998/FY 1999/FY 2000).
- # Review and approve Performance Assessments and Composite Analyses as required by the Defense Nuclear Facilities Safety Board Recommendation 94-2 (performance assessments of low-level radioactive waste disposal) for Los Alamos National Laboratory, Savannah River's saltstone and E-Area vaults, Hanford, Idaho National Engineering and Environmental Laboratory and issued Disposal Authorization Statements (FY 1998/FY 1999/FY 2000).

- # Reimburse 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 1998/FY 1999/FY 2000).
- # Complete the technical assessment by the National Academy of Science's Board on Radioactive Waste Management of the treatment options for high-level radioactive waste stored at the Idaho National Engineering and Environmental Laboratory (FY 1998/FY 1999/FY 2000).
- # Provide technical support for EM/Office of Civilian Radioactive Waste Management high-level waste activities, including implementation of the Environmental Management/Radioactive Waste Memorandum of Agreement and preparation of the Yucca Mountain Environmental Impact Statement (FY 1998/FY 1999/FY 2000); completed EM funded activities on testing high-level waste glass forms (FY 1998).

Technical Support to Environmental Restoration

- # Provide technical support for EM/environmental restoration initiatives, including project and project baseline review and analysis efforts (FY 1998/FY 1999/FY 2000).
- # Provide for the Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund as required by the Energy Policy Act of 1992 (FY 1998/FY 1999/FY 2000).

Support to Transition Activities

- # Continue to support Headquarters directed nuclear material field activities to achieve cost efficiencies and increase the effectiveness of these activities for accelerating stabilization and deactivation opportunities (FY 1998/FY 1999/FY 2000).

Headquarters Program Integration

- # Continue to support the *Paths to Closure* activities (FY 1998/FY 1999/FY 2000).
- # Continue Hazardous Waste Operations and Emergency Response training at the DOE weapons facilities and related sites (FY 1998/FY 1999/FY 2000).

Environmental and Regulatory Analysis

- # 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 1998/FY 1999/FY 2000).
- # Sign an agreement with the DOE, the State of New Mexico, and the Environmental Protection Agency Region VI that describes a mutual Albuquerque site vision, promotes collaborative decision-making as the basis for a strong and effective working relationship at Albuquerque sites, and clarifies the applicability of an existing Albuquerque interagency agreement and unilateral order (FY 1998/FY 1999/FY 2000).
- # Establish a collaborative decision-making process at the Albuquerque Operations Office, that results in a reduction in the number of Notices of Violation received by the Department by 50 percent from

the number received in FY 1998, and a decrease in the time for the State of New Mexico to approve the DOE's submitted documents by 25 percent (FY 1998/FY 1999/FY 2000).

Transportation and Packaging

- # Initiate Systems Engineering for EM transportation activities. This includes collecting requirements for current transportation activities, identification of new transportation and packaging needs to include analysis of complex-wide material flows, sensitivity analysis of packaging types and development and assessment for major transportation implementation options (FY 1998).
- # Develop and maintain partnership with the Department of Transportation to perform safety assessments on Department of Energy motor carriers (FY 1998/FY 1999/FY 2000); continue the analyses of potential packaging materials to improve the future packaging designs in safety performance (FY 1998); enhance the existing safety assessment program to include low-level waste container and package systems (FY 1999); and improve the existing package and transportation safety reporting program to emphasize safety performance (FY 1999).
- # Maintain and revise the training for HAZMAT shipments to assure compliance with 49 U.S.C. 5101 (FY 1998); maintain the Explosives Classification program to ensure DOE movement of explosives are in compliance (FY 1998); and maintain an efficient regulatory compliance training program (FY 1999/FY 2000).
- # Implement a complex-wide system to ensure internal and external notification of high visibility shipments to appropriate stakeholder officials, and provide public awareness of unclassified shipments (FY 1998/FY 1999/FY 2000); continue transportation focused forums and communications, with internal program activities and external stakeholders, to identify and resolve transportation issues and participate in specific transportation shipment planning (FY 1998/FY 1999/FY 2000); establish DOE wide protocols for notification, planning, inspection, and other functions with states and tribal governments (FY 1999/FY 2000); and provide technical support to field and program offices and to state, tribal, and local governments in preparing for and executing hazardous materials shipping campaigns (FY 1998/FY 1999/FY 2000).
- # Maintain DOE's automated transportation systems in support of efficient shipping and tracking throughout the DOE complex (FY 1998/FY 1999/FY 2000). These systems include the DOE tracking system, the real-time and historical shipment database, and the hazardous materials routing system.
- # Maintain DOE's transportation and packaging technical base program to establish DOE's position on regulatory issues related to transportation and packaging, and to provide transportation and packaging testing and materials infrastructure for DOE (FY 1999/FY 2000).
- # Complete formulation of the policy for the Transportation Emergency Preparedness Program (FY 1999).
- # Conduct a full field transportation exercise, TEMPER '98, in Montgomery County, Maryland. The exercise integrates the planning, training, and conduct of an exercise and establishes a cohesive agency implementation of the support requirements (FY 1998/FY 1999).

- # Implement an integrated, inter-regional Transportation Emergency Preparedness program through the eight DOE Regional Coordinating Offices to address State, Tribal, and local officials concerns about DOE's transportation of radioactive materials (FY 1998/FY 1999/FY 2000).

Emergency Management

- # Base on recent emergencies at EM facilities, initiated a more focused Facility Emergency Preparedness Program to review site/facility plans and procedures to assure compliance with DOE Orders (FY 1998/FY 1999/FY 2000).

National Analytical Management 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 1998/FY 1999/FY 2000).
- # Provide leadership by the National Analytical Management Program for the DOE Office of Environmental Restoration to become an accrediting body within the Environmental Protection Agency's National Environmental Laboratory Accreditation Program (FY 1998/FY 1999/FY 2000).

Pollution Prevention

- # Maintain pollution prevention infrastructure at DOE sites and operations/field offices to encourage efficiency and environmental stewardship through implementation of projects that reduce waste/pollutant and reduce life-cycle cost of operations (FY 1998/FY 1999/FY 2000).
- # Conduct reporting, tracking, and waste minimization program activities required by the Resource Conservation and Recovery Act at DOE sites that generate, treat, or store hazardous/mixed wastes (FY 1998/FY 1999/FY 2000).
- # Conduct pollution prevention activities required by State agencies at DOE sites (FY 1998/FY 1999/FY 2000).
- # Provide leadership to the Department's pollution prevention program through development of policy/goals and as chair for the Multi-Site Waste Reduction Steering Committee and the field Waste Minimization Coordinators Group (FY 1998/FY 1999/FY 2000).
- # Coordinate pollution prevention activities across the complex and work with White House and other Federal agencies in developing and implementing Pollution Prevention Executive Orders (FY 1998/FY 1999).
- # For FY 2000, the Department will change the way the Pollution Prevention program is managed. Funds for the Headquarters controlled National Pollution Prevention Program will be significantly reduced from FY 1999 level. The field is expected to provide the resources required to continue implementing high return-on-investment and cost-effective projects and complying with Executive Order and DOE Orders.

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
HQ-PM-001 / Policy and Management	19,738	27,533	23,190	-4,343	-15.8%
HQ-WM001 / Complex-Wide Waste Management Support and Analyses	14,851	2,728	2,610	-118	-4.3%
HQ-100-AA / Technical Support to ER	8,672	720	690	-30	-4.2%
HQ6002 / Support to Transition Activities	5,823	2,735	3,617	882	32.2%
HQNP-NCSP/Nuclear Criticality Safety Program	0	3,000	3,750	750	25.0%
HQ-EM74 / Headquarters Program Integration	9,182	8,108	9,081	973	12.0%
HQ-EM75 / Environmental and Reg. Analysis	1,501	518	300	-218	-42.1%
HQ-TMHQ1 / Transportation and Packaging . .	10,509	11,918	11,753	-165	-1.4%
HQ-EM-HQ-001 / Emergency Preparedness Program	3,259	3,218	2,849	-369	-11.5%
ID-CMP-001 / National Analytical Management Program	5,205	3,000	3,000	0	0.0%
OPS/HQ-PP / Pollution Prevention	23,575	12,790	7,138	-5,652	-44.2%
Subtotal	102,315	76,268	67,978	-8,290	-10.9%
HQ-9999-01 / Federal Contribution to UE D&D Account	388,000	398,088	420,000	21,912	5.5%
Total, Multi-Site Activities	490,315	474,356	487,978	13,622	2.9%

Site Description

Multi-Site

The Multi-Site program consists of several subprograms, which provide technical support, education and training, Hazardous Waste Operations and Emergency Response Grants, Environmental and Regulatory Analysis, Transportation Management, National Analytical Management, Emergency Preparedness and Pollution Prevention.

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 sites. The Multi-Site program also supports education and training to improve the technical capability of the EM staff pursuant to the Defense Nuclear Facilities Safety Board Recommendation 93-3, "Improving the Technical Capabilities in Defense Nuclear Facility Programs". 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 in order to track and report to Congress, interested stakeholders, and the public on the status of the program. Also, funds are provided for the EM Multi-Site support grants for the Hazardous Waste Operations and Emergency Response training.

The Environmental and Regulatory Analysis program advocates and champions the resolution of environmental, legal, regulatory and contractor work force restructuring issues that cut across many sites and do not readily fall within the purview of the primary business lines. The program provides policy direction and guidance to operations and the Environmental Management 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 and its regulators, and its stakeholders.

The National Transportation program provides policy, guidance, and a transportation infrastructure to ensure the availability of safe, efficient, compliant, and timely transport of all DOE materials (except weapons, weapons components, and Navy spent fuel). The program serves as the corporate point of contact and management for interface and exchange by DOE with external entities, other Federal agencies, consensus standards organizations and transportation regulators. The program's near-term focus is on transportation and packaging needs in support of the DOE/EM's focus on *Accelerating Cleanup: Paths to Closure* plan.

The DOE Order 151.1, "Comprehensive Emergency Management System", requires the Office of Environmental Management to ensure the implementation of policy and DOE Order requirements related to emergency management facilities/sites and operations offices under its cognizance. It is also required to establish and maintain a system for handling emergency occurrences involving unclassified shipments of radioactive materials. The Emergency Management Program implements the Transportation Emergency Preparedness Program and the Facility Emergency Preparedness Program to address these requirements.

The National Analytical Management Program, operated out of the Idaho Operations Office, is responsible for the management for the following areas: Quality Assurance, Resource Management, Data Integration, Data Validation, and Methods Development. Quality Assurance includes the production of defensible, reliable data through the evaluation of the performance of laboratories that provide sample analysis services to the Department. The National Analytical Management Program represents DOE on the National Environmental Laboratory Accreditation Council and sponsors the Multi-Agency Radiation Laboratory Protocol group. Resource management includes the sample management, information systems, and laboratory issues for which technical assistance, policy and guidance are provided. The Data Integration activity supports the use and development of analytical planning tools to improve the selection and documentation of environmental management program decisions. Projects within the Methods Development Program includes the maintenance of the methods compendium and database, methods validation, and business practices including acquisition strategy.

The National Pollution Prevention program funds Headquarters and field activities for the Department's Pollution Prevention program. The missions of the Department's Pollution Prevention program are to: 1) to comply with waste minimization, pollution prevention, affirmative procurement, and recycling requirements under federal/state statutes, Executive Orders, and DOE Orders, and 2) reduce waste streams generated through implementation of cost effective pollution prevention projects. The National Pollution Prevention program funds will be used primarily by the field to comply with federal/state regulations on waste minimization and pollution prevention. A small fraction of the funds will be used by Headquarters to coordinate the Department's overall Pollution Prevention program, develop guidance/policy, provide technical support, facilitate information transfer, conduct program reviews, compile performance data and prepare reports that are required by Executive Orders and the 1998 Programmatic Environmental Impact Statement Lawsuit Settlement between DOE and the Natural Resources Defense Council. For FY 2000, the field will be responsible for implementing many of the activities funded by the National Pollution Prevention program in prior years. Such activities include complying with Executive Orders and DOE Orders, training and providing technical support to waste generators in identifying opportunities, implementing high return-on-investment and cost-effective projects, tracking pollution prevention progress and reporting progress to Headquarters. The National Pollution Prevention program is responsible for the Department's significant progress toward meeting its waste reduction goals. These goals are included in the Department's *Accelerating Cleanup: Paths to Closure* plan.

Pollution prevention is required by Federal and State statutes including the Pollution Prevention Act; Resource Conservation and Recovery Act; Emergency Planning and Community Right-to-Know Act; and Executive Orders 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements and 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition.

Detailed Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The scope planned for FY 2000 has been reviewed and is appropriate to meet the goals of the Multi-Site activities as outlined in the *Accelerating Cleanup: Paths to Closure* plan. The funds requested for FY 2000 are appropriate to perform the activities based on a historical level of effort cost. No quantifiable corporate performance measures are associated with these projects.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

HQ-PM-001 / Policy and Management

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.

- # Focus on re-engineering the EM information infrastructure, strengthening its technical support and enhancing its systems development capability to provide a more robust, efficient, and cost-effective network and services. This will enable EM to support a growing number of applications, greater volume of transactions, and more sophisticated users. Planned activities include the EM Network Services, EM Customer Support, System and Data Security and Integrity, and EM Systems Development.
- # Enhance Tribal, State, and local government participation in the EM program through the continuation of State and Tribal Governments Working Groups, government-to-government relationships with Native American Tribes, and cooperative agreements with the National Governors Association, and the National Association of Attorneys General; continue management and evaluation of the EM Site Specific Advisory Board initiative and support the National Environmental Training Office's complex wide efforts.
- # Plan activities to include standardizing environmental crosscutting training, expanding partnerships with other Federal and State agencies, conducting training effectiveness evaluations, and responding to General Accounting Office/Inspector General/Defense Nuclear Facilities Safety Board recommendations. Support EM's participation in the Science Bowl.
- # Provide analytical support for life-cycle analysis for the EM program and projects. Provide general analytical and production support for National EM policy including long-term stewardship strategy, and completion of geographic information system development.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

As part of a Departmental and Natural Resources Defense Council settlement agreement, funding is included for a Citizens Monitoring and Technical Assessment Fund for eligible external organizations to acquire contractor support that will allow them to perform technical reviews and analyses of environmental activities at the DOE sites. A nationally recognized, non-profit, non-governmental organization will be jointly selected to administer this fund. Any non-profit, non-governmental organization or any Federally recognized tribal government working on issues related to the nuclear weapons complex is eligible to receive monies from the Fund, upon application and subject to the criteria set forth. Any organization or tribe receiving funds for technical review and analysis will provide copies of all final work products to DOE and the Fund Administrator and any field products may be made publicly available.

HQ-PM-001	19,738	27,533	23,190
-----------------	--------	--------	--------

HQ-WM001 / Complex-Wide Waste Management Support and Analyses

The mission of the waste management program is to protect people and the environment from the hazards of the DOE radioactive and hazardous waste by providing an effective and efficient system that minimizes, treats, and stores the waste and disposes most of the waste as soon as possible. The project provides support for waste management activities that cut across the entire DOE complex. Support is provided for interactions with the Environmental Protection Agency, the Nuclear Regulatory Commission, and the Defense Nuclear Facilities Safety Board on waste management issues; implementation of the DOE requirements for managing radioactive wastes; and technical analyses to evaluate complex-wide integration opportunities and reduce outyear costs.

Provide technical analysis to enable efficient implementation of DOE Order 435.1, Radioactive Waste Management; DOE Policy 450.5, Line Environment, Safety and Health Oversight; and related interactions with the Nuclear Regulatory Commission and the Environmental Protection Agency.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Conduct analyses and reviews in response to the Defense Nuclear Facilities Safety Board recommendations, including reviews of revised Site Performance Assessments for disposal of low-level radioactive waste in accordance with the Board’s Recommendation 94-2.
- # Provide support for privatization initiatives including feasibility analyses, lessons learned, and interactive workshops among field personnel.
- # Reimburse the Environmental Protection Agency for cost of annual Resource Conservation and Recovery Act inspections at the DOE facilities that store, treat, or dispose of mixed low-level radioactive waste.
- # Meet the requirements of the Memorandum of Agreement with the Office of Civilian Radioactive Waste Management for acceptance of the Department’s high-level radioactive waste.
- # Conduct technical analysis of major waste management program issues by the National Academy of Science’s Board on Radioactive Waste Management.
- # Identify and analyze opportunities to integrate waste management activities across the DOE complex.
- # Exchange and analyze information with foreign national programs on innovative waste management technologies and operational experiences.

HQ-WM001	14,851	2,728	2,610
----------------	--------	-------	-------

HQ-100-AA / Technical Support to ER

The activities funded by this project include a variety of crosscutting efforts that support required Environmental Restoration and EM initiatives. Technical support is provided in the areas of performance measure tracking; information/data management integration; and project review/analysis.

- # Continue to provide technical support in the areas of document review, program integration, and other crosscutting EM activities.

HQ-100-AA	8,672	720	690
-----------------	-------	-----	-----

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

HQ6002 / Support to Transition Activities

This activity provides funding to continue initiatives to support and respond to the concerns of the Defense Nuclear Facilities Safety Board; Environmental Protection Agency; Nuclear Regulatory Commission; other technical review boards; and contractor proposed stabilization and deactivation projects. This support consists of individuals who are knowledgeable and experienced with the Nuclear Material and Facility Stabilization program. These individuals are able to perform independent technical reviews of scientific base and engineering practices.

- # Will accelerate stabilization and deactivation activities to respond to concerns of the Defense Nuclear Facilities Safety Board, Environmental Protection Agency, Nuclear Regulatory Commission, and other technical review boards.
- # Provide support for acceleration of plutonium shipments between Rocky Flats, Richland, and the Savannah River Site.
- # Provide support of the material stewardship program that will reduce the outyear mortgage and facilitate material dispositioning through consolidation of selected excess nuclear material.
- # Continue to support grants and agreements to States for spent nuclear fuel shipments to Idaho from the West Coast and cross country.
- # Continue to support the Interagency Agreement with the Nuclear Regulatory Commission on spent nuclear fuel issues; and provide support to DOE, the Department of State, and Indonesian Governmental organizations to complete the Indonesian spent fuel shipment.
- # Continue funding and fulfill a 4-year agreement ending in FY 2000 with Pembroke State University for motivational activities and counseling to Native American and African American students in the area of environmental science.
- # Continue payment of International Atomic Energy Agency/Computer Education Group dues to support international commitments on spent nuclear fuel and nuclear material management technology exchange.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Continue support of the International Institute for Applied Systems Analysis to perform research and impact of nuclear contamination in the former Soviet Union to present viable alternatives in addressing critical remediation concerns.

Continue to fund the Arctic Military Environmental Corporation program to support a Department of Defense led effort to improve the Russian Navy’s radioactive waste management capabilities associated with the nuclear submarine decommissioning program. The Arctic Military Environmental Corporation is a forum for dialogue and joint activities among the United States, Russian, and Norwegian military and environmental officials.

HQ6002	5,823	2,735	3,617
--------------	-------	-------	-------

HQNP-NCSP / Nuclear Criticality Safety Program

This activity provides support to the Nuclear Criticality Safety 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. This resulted in the five-element Nuclear Criticality Predictability Program. Ongoing activities have been included under the program established for the Defense Nuclear Facilities Safety Board Recommendation 97-2, which supports the efficient integration and functioning of criticality safety programs across all the DOE operations involving fissile materials. The Environmental Management-funded segments of the Defense Nuclear Facilities Safety Board Recommendation 97-2, Nuclear Criticality Safety Program, consist of three elements: a) nuclear data; b) calculational methods; and c) guidance on applicability of bounding curves/data.

Nuclear Data

- ▶ Perform neutron reaction cross section measurements for Potassium (K) and Flourine (F) and one other isotope, as needed.
- ▶ Generate aluminum, U-233, U-235, and Chlorine covariance data in new Evaluated Nuclear Data File formats.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- ▶ Update other Evaluated Nuclear Data File/Part B with relevant covariance information, a technical component of such files.
- ▶ Develop the Oak Ridge National Laboratory Evaluated Nuclear Data File Processing module for a group-energy Monte Carlo computer code for an unresolved resonance level treatment.
- ▶ Develop a nuclear data file processing module capability to process covariance.
- ▶ Update the Cross-Section Evaluation Working Group benchmarks for criticality applications.
- ▶ Continue the Cross-Section Evaluation Working Group participation and criticality integration.

Analytic Methods

- ▶ Continue work on the group-energy Monte Carlo computer code KENO, the continuous energy Monte Carlo Nuclear Particle computer code MCNP, and the continuous energy Monte Carlo computer code VIM.
- ▶ Place new versions of the methods in the Radiation Safety Information Computational Center and continue top priority modification.
- ▶ Conduct workshops on the systems for criticality safety analysis.
- ▶ Complete work on stratified sampling.

Guidance/Bounding Curves

- ▶ Apply sensitivity/uncertainty methods to additional specific DOE fissile material operations and to simulate intermediate-energy range critical experiments.
- ▶ Report on sensitivity/uncertainty methods results for the first set of bounding curves and data; and statistical methods for defining bounding margins of subcriticality.
- ▶ Report on results for minimum critical parameters.
- ▶ Document the standardized computer analysis for licensing evaluation system optimization sequence and release it to the Radiation Safety Information Computational Center for distribution.

HQNP-NCSP 0 3,000 3,750

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

HQ-EM74 / Headquarters Program Integration

The activities funded in this Project Baseline Summary provide training at DOE nuclear weapons facilities and related sites under the Hazardous Waste Operations Emergency Response program. Funding also is provided for technical support in the areas of document review, program integration, *Accelerating Cleanup: Paths to Closure* plan initiative and other crosscutting activities.

- # Continue the training at DOE nuclear weapons facilities and related sites under the Hazardous Waste Operations Emergency Response program.
- # Accelerate site closure goals by enhancing *Paths to Closure* initiatives: identify opportunities for mortgage reduction; accelerate project efficiencies through “lessons learned” and “learning-curve” implementation; and maintain site closure goals by monitoring site critical paths and baselines.

HQ-EM74	9,182	8,108	9,081
---------------	-------	-------	-------

HQ-EM75 / Environmental and Regulatory Analysis

The activities funded by this project functions as 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. Acts as the National Environmental Policy Act Compliance Officer to promote cost effective compliance across the EM program.

- # Establish and complete a collaborative decision-making process at Albuquerque and at least one additional DOE site to build trust and confidence between DOE and its State and the Environmental Protection Agency regulators and to assist in accelerating the closure of the site.
- # Continue and complete LandTech implementation at the Idaho National Engineering and Environmental Laboratory and at the Grand Junction Project Office, that will provide a systematic, Internet-based approach for stakeholder and regulatory integration and decision-making during all phases of managing a site closure project.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

Conduct analyses and reviews of the National Environmental Policy Act and Agreement-in-Principle documentation.

HQ-EM75 1,501 518 300

HQ-TMHQ1 / Transportation and Packaging

The National Transportation program develops and maintains the DOE baseline transportation resources, including policy to assure the availability of safe, regulatory compliant, economical, efficient and timely 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 flow;
- 5) conducting a forward-looking, aggressive transportation technology program to resolve complex transportation and packaging problems and address regulatory issues; and
- 6) operational management of all packaging and shipping activities both on- and off-site (excluding weapons and weapon components).

The Department’s transportation and packaging activities are one of the most heavily regulated functions because of the hazardous materials (particularly radioactive) that are shipped. Noncompliance with regulations carries heavy penalties (both criminal and civil). Transportation is an area of public scrutiny due to the perceived hazards associated with the transportation of the DOE materials.

- # Assure a safe and regulatory compliant transportation system and operations.
- # Focus on implementation of baseline transportation and packaging requirements to support EM’s *Accelerating Cleanup: Paths to Closure* plan, and apply transportation systems engineering to other DOE programs outside of EM.
- # Provide transportation and packaging testing and materials infrastructure to respond to identified baseline requirements.
- # Coordinate integrated transportation planning and operation functions with all Departmental elements.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Continue to provide a complex-wide system to ensure internal and external notification of high visibility shipments.
- # Ensure efficient use of DOE packages through a packaging fleet management system.
- # Use safety performance criteria to monitor the Department's transportation safety and as a basis for implementing specific operational safety assessments.
- # Maintain a partnership with the Department of Transportation on performing safety assessments on motor carriers.
- # Assure technological validity and consistency throughout the complex and provide national and international leadership for transport systems.
- # Strengthen communications with DOE traffic managers and other programs to maximize effective transportation systems and operations.
- # Maintain the Department's automated transportation system in support of efficient shipping and tracking throughout the complex. Focus will be on covering all the remaining smaller sites to get as close to 100 percent coverage as possible.
- # Maintain an efficient regulatory compliance training program.
- # Provide technical support to field and program offices and to state, tribal, and local governments in preparing for and executing hazardous materials shipping campaigns.
- # Provide transportation focused forums and communications, with internal program activities and external stakeholders, to identify and resolve transportation issues and participate in specific transportation shipment planning.
- # Coordinate with the Office of Emergency Management to provide technical assistance initiatives to national and regional stakeholders.
- # Maintain a corporate transportation information resource center and provide information products and tools to DOE managers, contractors, other Federal agencies, and external parties.

HQ-TMHQ1 10,509 11,918 11,753

**Environmental Management/Defense
Environmental Restoration and Waste
Management/Post 2006 Completion/Multi-Site**

FY 2000 Congressional Budget

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

HQ-EM-HQ-001 / Emergency Management

The Emergency Management Program consists of two programs: Transportation Emergency Preparedness and the Facilities Emergency Preparedness. Emergency Management assures that planning, training, and resources are available for the protection and safety of our workers; State, Tribal, and local emergency responders; the public; and the environment in the event of an operational emergency at an EM facility or during the transportation of hazardous materials.

The Transportation Emergency Preparedness Program, a Department-wide program, is designed to ensure that State, Tribal, and local emergency responders have access to the planning, training and resources necessary to respond to transportation accidents involving unclassified, non-weapons shipments of the DOE radioactive materials, and directly supports the accomplishment of priority DOE shipping goals. Shipping activities will increase as defined in the *Accelerating Cleanup: Paths to Closure* plan. The Transportation Emergency Preparedness Program will continue to address the issues raised by stakeholders along the transportation corridors.

The Transportation Emergency Preparedness Program:

1) ensures that DOE meets its transportation emergency responsibilities under federal regulations, the National Contingency Plan, and the Federal Radiological Emergency Response Plan; 2) addresses State, Tribal, and local government concerns about emergency preparedness for DOE radioactive material shipments; 3) coordinates DOE-wide transportation emergency preparedness activities for nonweapons-related radioactive material shipments; and 4) supports emergency responders at all levels of government. Emergency preparedness is the number one concern identified by stakeholders in DOE's shipping campaigns. Also, the Transportation Emergency Preparedness Program activities reinforce DOE's and EM's commitment to openness and full participation, leading to greater public understanding, confidence, and cooperation with EM cleanup and waste activities.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

The Facilities Emergency Preparedness Program is designed to ensure that both Headquarters and field elements can respond effectively to an operational emergency at an EM facility, as required by DOE Order 151.1. This program provides a system for ensuring EM Headquarter personnel are prepared to provide technical expertise and/or programmatic assistance when an emergency is reported and provides assurance to EM Headquarter senior management personnel that facilities/sites under the purview of EM have adequately addressed emergency preparedness requirements. Planning and assistance activities are conducted by the Facilities Emergency Preparedness Program to establish and maintain a capability to respond to an emergency at an EM facility.

- # Implementation of the Transportation Emergency Preparedness Program will begin with the eight DOE Regional Coordinating Offices participating; will address emergency management issues raised by stakeholders along DOE transportation corridors; and will update required emergency responder training.
- # Joint Headquarters and field planning and drill activities will continue to assure effective response in the event of an operational emergency.
- # The Regional Transportation Emergency Preparedness Program planning and training assistance programs will be in place to provide necessary support to States, Tribes, and local responders.
- # Emergency planning documents will be updated to ensure an adequate and integrated Headquarters and field response to operational emergencies at EM facilities.
- # A facility verification program will be developed to ensure adequate emergency response capabilities.

HQ-EM-HQ-001	3,259	3,218	2,849
--------------------	-------	-------	-------

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

ID-CMP-001 / National Analytical Management Program

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. The program provides:

- ▶ Guidance, training, and technical assistance to field sites in applying streamlined data planning, such as the Data Quality Objective process and Streamlined Approach For Environmental Restoration, across all EM environmental characterization operations, and to assure appropriate data validation and data conformance with regulatory demands;
- ▶ Guidance to the field in establishing and maintaining cost-effective sampling and analytical Quality Assurance programs;
- ▶ Operations of proficiency testing programs that serve as the basis for evaluating the capabilities of radiochemistry/mixed waste analytical laboratories;
- ▶ Assistance in establishing an integrated Field Sample Management program at each operations office to centralize and optimize business management of field characterization systems, and to consolidate and privatize, where appropriate, analytical laboratory capacity to meet DOE analytical needs; and
- ▶ Guidance for standardizing contracting for analytical services and standardizing specifications for automated data management and review processes that save substantial time and money. Part of these activities are being carried out in response to the General Account Office Report No. RCED-95-118 “Nuclear Facility Cleanup, Centralized Contracting of Laboratory Analysis Would Produce Budgetary Savings.”

The Department of Energy will collaborate with the Environmental Protection Agency in conducting technology demonstration of environmental decision support software, which focus on environmental decision support.

(dollars in thousands)

FY 1998	FY 1999	FY 2000
---------	---------	---------

- # Will privatize the laboratory accreditation process.
- # Will finalize the DOE Electronic Data Deliverable format for environmental analytical data.
- # Will position itself to address the changing needs in analytical services from characterization to decontamination and decommissioning, and long-term monitoring.

ID-CMP-001	5,205	3,000	3,000
------------------	-------	-------	-------

OPS/HQ-PP / Pollution Prevention

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 May 1996 establishment of aggressive source reduction, recycling, and affirmative procurement goals, to be achieved by the end of 1999. Pollution prevention applied within EM can significantly reduce wastes, allowing the cost savings to be used to accelerate the cleanup effort. As in industry, pollution prevention is a core program that helps DOE achieve maximum environmental benefits.

The DOE/EM pollution prevention program directly addresses the fifth Environmental Management *Accelerating Cleanup: Paths to Closure* principle to reduce generation of wastes.

- # Maintain effective and compliant pollution prevention programs at over twenty DOE sites to comply with Federal and State laws and regulations related to pollution prevention and waste minimization.
- # Prepare annual Waste Generation and Pollution Prevention Progress Report. This report is required to comply with the Programmatic Environmental Impact Statement Lawsuit Settlement and recent Pollution Prevention Executive Orders.

(dollars in thousands)

	FY 1998	FY 1999	FY 2000
# Establish nation-wide pollution prevention teams to assist sites in identifying pollution prevention and cost saving opportunities. The teams will focus on sites with less mature pollution prevention programs and are expected to identify potential savings. Continue gathering data on pollution prevention successes across the complex and distribute the information to all DOE sites to encourage wider applications of demonstrated practices.			
OPS/HQ-PP	23,575	12,790	7,138
Subtotal, Multi-Site	102,315	76,268	67,978

**HQ-9999-01 / Federal Contribution to UE D&D Fund
Appropriation Account**

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 those sites, subject to a specific reimbursement limit. This payment is to cover the Federal government's share of cleanup being carried out at active uranium and thorium processing sites. 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 Government appropriations. The purpose of this activity is to provide the annual Government contribution.

(dollars in thousands)

	FY 1998	FY 1999	FY 2000
# Provide the FY 2000 Federal Government contribution.			
HQ-9999-01	388,000	398,088	420,000
Total Multi-Site Activities	490,315	474,356	487,978

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

HQ-PM-001 / Policy and Management

Overall decrease due to reduction/elimination of lower priority activities (\$11,631,000) funded at Headquarters and curtailment support to the National Environmental Training Office and strategic planning activities (\$657,000). Key increases are required to support the Citizen Monitoring and Technical Assessment Fund (\$5,000,000), to fully fund the cooperative programs with ten Indian Nations or pueblos (\$1,500,000); and to conduct Post 2006 implementation review and correct deficiencies that surface during the year (\$1,445,000). -4,343

HQ-WM001 / Waste Management

Reduction in funds slightly reduces performance of technical analyses to evaluate complex-wide integration opportunities. -118

HQ-100-AA / Technical Support to ER

Environmental restoration crosscutting efforts in the areas of performance measure tracking, information/data management integration and project reviews/analysis are slightly reduced. -30

FY 2000 vs. FY 1999 (\$000)

HQ6002 / Support to Transition Activities

Increase in funding will support the International Institute of Applied Systems Analysis to perform research and to support the Arctic Military Environmental Corporation program. 882

HQNP-NCSP / Nuclear Criticality Safety Program

Increase is driven by the Defense Nuclear Facilities Safety Board Recommendation 97-2 and supports current scope of work as agreed to by other Departmental organizations. 750

HQ-EM74 / Headquarters Program Integration

Increase in funding will fully support the training for DOE nuclear weapons facilities and related sites under the Hazardous Waste Operations Emergency Response program and technical support in the areas of document reviews. Site baseline assessments and crosscutting activities are slightly increased. 973

HQ-EM-75 / Environmental and Regulatory Analysis

Decrease reflects fewer collaborative decision-making processes at different sites with EM presence than was originally anticipated. Additionally, Environmental Management will focus on LandTech implementation at fewer sites than was originally anticipated. -218

HQ-TMHQ1 / Transportation and Packaging

Decrease in funding is due to a reduction of activities in the institutional coordination area. -165

HQ-EM-HQ-001 / Emergency Preparedness Program

Decrease in funding is due to completion of the Transportation Emergency Preparedness policy documents in FY 1999 (DOE Order 151.1 Chapter and Guide) and the redesign of the National Transportation Emergency Responder training program. -369

OPS/HQ-PP / Pollution Prevention

Decrease reflects the Department's expectation of savings from a more efficient Pollution Prevention program as a result of increased pollution prevention accountability by waste generators and successes in building pollution prevention into the Department's operation culture. -5,652

FY 2000 vs. FY 1999 (\$000)

HQ-9999-01 / Federal Contribution to UE D&D Fund Appropriation Account

# Increase in the Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund Appropriation account supports the level required by the Energy Policy Act of 1992, adjusted for inflation.	21,912
Total Funding Change, Multi-Site	<u>13,622</u>

Capital Operating Expenses & Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
General Plant Projects	28,122	28,551	42,111	13,560	47.5%
Accelerator Improvement Projects	0	0	0	0	0%
Capital Equipment	19,627	18,224	22,905	4,681	25.7%
Total, Capital Operating Expense	47,749	46,775	65,016	18,241	39.0%

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 1998	FY 1999	FY 2000	Unappropriated Balance
00-D-401 Spent Nuclear Fuel Treatment and Storage Facility, SR	18,500	0	0	0	7,000	11,500
99-D-403 Privatization Phase I Infrastructure Support, RL	30,880	0	0	14,800	13,988	2,092
97-D-402 Tank Farm Restoration and Safe Operations, RL	232,700	7,584	13,961	22,723	20,516	167,916
96-D-408 Waste Management Upgrades, VL (RL Subproject)	12,800	8,229	4,400	171	0	0
95-D-402 Install Permanent Electrical Service, WIPP	5,942	5,766	176	0	0	0
95-D-405 Industrial Landfill V and Construction/Demolition Landfill VII, OR	7,600	5,800	1,800	0	0	0
95-D-407 219-S Secondary Containment Upgrade, RL	5,493	2,600	2,500	393	0	0
94-D-404 Melton Valley Storage Tank Capacity Increase, ORNL	48,000	46,781	1,219	0	0	0
94-D-407 Initial Tank Retrieval Systems, RL	202,000	12,580	10,100	32,860	4,060	142,400
93-D-187 High-Level Waste Removal from Filled Waste Tanks, SR	558,050	244,177	18,220	15,214 ^a	8,987	271,452
89-D-174 Replacement High-Level Waste Evaporator, SR	121,604	116,982	4,622	0	0	0
Total, Construction	450,499	56,998	86,161	86,161	54,551	595,360

^a Reflects FY 1999 Conference Mark which transfers \$4,512,000 from project 96-D-408, Waste Management Upgrades to project 93-D-187, High-Level Waste Removal from Filled Waste Tanks at the Savannah River Site.

00-D-401, Spent Nuclear Fuel Treatment and Storage Facility, Preliminary & Final Design (Title I & II), Savannah River Site, Aiken, South Carolina (SR-SF09)

(Changes from FY 1999 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 2000 Budget Request (<i>Preliminary Estimate</i>)	1Q 2000	4Q 2002	NA	NA	18,500 ^a	28,400 ^a

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
2000	7,000	7,000	5,000
2001	8,500	8,500	9,000
2002	3,000	3,000	4,500

^a Preliminary Cost Estimates for the 105-L Treatment and Storage Facility project are based upon the Pre-Conceptual Design dated 3/12/98 as modified by DOE-SR. Design completion is less than 1 percent. The preliminary estimates are: Total Estimated Cost -- \$154,233,000 and Total Project Cost -- \$239,879,000. NOTE: Other Project Costs of \$9,900,000 are expected during the design only construction project line item. **These estimates are used for the purpose of requesting design funding only. Future construction funding (if requested) will be based upon approximately 35 percent design complete cost estimate and funded as a separate construction line item.**

3. Project Description, Justification and Scope

The Department of Energy Environmental Management Program has the responsibility for the safe, effective, and efficient storage of the current and future inventory of DOE-owned spent nuclear fuel. This spent nuclear fuel, including the returned foreign research reactor and domestic research reactor spent nuclear fuel, will be prepared for disposal and stored in a road-ready condition awaiting placement in a permanent geologic repository. In accordance with the DOE Spent Nuclear Fuel Programmatic Environmental Impact Statement Record of Decision, the Savannah River Site is designated to manage the aluminum clad spent nuclear fuel inventory for the DOE complex, as well as projected receipts for the next 30 to 40 years.

Funding is requested to perform preliminary and final design, (Title I and Title II), of the project, including vendor supplied engineered equipment design. No funding for Title III design or construction activities is requested.

Recent evaluations have confirmed the technical feasibility and potential cost savings for the reuse of the 105-L facility for housing the Treatment and Storage Facility project. Implementation of this approach is projected to save between \$100 to \$300 million compared to conventional reprocessing of spent nuclear fuel. The project consists of direct de-inventory of the existing wet basins to repository-ready storage via transfer and treatment provisions installed in the 105-L Reactor building. Summary features of the project are:

- ▶ Continued receipt at L-Area Disassembly Basin of DOE-owned aluminum clad spent nuclear fuel from Domestic and Foreign Research Reactors using existing equipment. Existing cask decontamination equipment in the Stack Area will also be used.
- ▶ Preparation of the spent nuclear fuel for disposal at a national repository using the melt and dilute treatment technology, with new furnaces and associated support equipment, including offgas system, installed in the 105-L process room. Spent nuclear fuel will be transferred to the process room from the L-Area Disassembly Basin via the Deposit and Exit canal using a modified Deposit and Exit conveyor.
- ▶ Load treated spent nuclear fuel into a canister/transfer cask, and perform sealing and leak testing operations using new transfer cell and canister preparation equipment installed in the existing Crane Maintenance Area.
- ▶ Load transfer cask onto a special transporter in the Stack Area using the existing crane. Transfer the canister of treated spent nuclear fuel to dry interim storage, consisting of a modular storage system installed outside the 105-L building.
- ▶ Load canisters of treated spent nuclear fuel into transportation casks for transport off the Savannah River Site for storage or disposal.

In general, the project will make use of existing structures, systems, or components where possible, and add new structures, systems, or components where necessary.

PRELIMINARY ACQUISITION STRATEGY

The Treatment and Storage Facility project implementation strategy consists of two separate line items; an FY 2000 design only construction line item and an FY 2003 construction and start-up line item.

The design only line item was validated in April 1998 and the construction line item will be validated in April 2001.

The goal of the design only project is to provide a well established baseline for the construction estimate and contract. It is planned that the construction project will be validated based upon approximately 35 percent design complete.

The procurement process for engineered equipment will be integrated with the design only project to the extent necessary to allow incorporation of vendor design information into the overall design project. The vendor design process, up through approval of design drawings, will be included in the design only project scope; actual procurement of the engineered equipment will be part of the construction line item scope.

The use of on-site construction forces will be considered, via a documented make or buy process, for those portions of construction activities inside the 105-L facility. Some large activities (e.g., roof repair, outside Disassembly and Removal activities) will be subcontracted by the management and operating contractor, however, contamination levels, security requirements, and operating facility interface requirements limit the opportunity for cost-effective fixed price construction contracts for most of the projected work within the 105-L facility. The use of contracted-out architect/engineer design services will be considered for the dry storage facility.

PROJECT RISKS

The primary risks that could impact the cost and/or schedule of the Treatment and Storage Facility project, if not properly mitigated, are highlighted below, along with planned or existing mitigation activities. However, significant development work and independent reviews have been conducted over the past three years to better define and understand the proposed project. For example, technology development is nearing completion having been validated through bench scale and small scale testing using surrogate materials. The concept has also been validated by third party small scale testing (Argonne National Laboratory) using irradiated samples. Through a Memorandum of Understanding with the Savannah River Site, the Nuclear Regulatory Commission is conducting an ongoing review of the research and development results to ensure that any technical issues are identified and addressed early in the process. In a June 1998 letter report, the Nuclear Regulatory Commission concluded that melt and dilute would be an acceptable concept for geologic disposal of aluminum-based spent nuclear fuel. As final proof-of-concept, Savannah River is preparing an L-Area pilot demonstration, in production form, using actual spent fuel assemblies.

▶ 105-L Configuration Control

Lack of an accurate baseline of the existing facility configuration could impact project cost and schedule if not identified until after construction activities begin. Current project plans include an early effort prior to definitive design, including walk downs, to establish an accurate configuration baseline for the project

▶ Technology Risks

It is assumed that the technology selected in the Environmental Impact Statement Record of Decision will be melt and dilute. If the alternate technology, direct/co-disposal is selected, the scope of this project will change, including elimination of equipment for treatment, increased characterization equipment and larger dry storage capacity. The Record of Decision is expected in mid 1999 in advance of design activity.

Offgas system uncertainties and secondary waste stream identification and disposition are the remaining components of technology risk. The centerpiece of the mitigation strategy is the Technology Development program being conducted by the Savannah River Technology Center. Program milestones include the following:

Process Development/Final Technology Report	June 1998
Issue Technical Performance Requirements	July 1998
Performance Requirements Validation	Sept 2000

Testing of irradiated spent fuel to validate the Functional Requirements is scheduled to be accomplished in FY 2000 in the L-Area pilot demonstration. While there is some risk that this final testing could result in changes to the Functional Requirements, primarily in the area of offgas engineering, this information would be available in sufficient time to be factored into the initial design.

Acceptance criteria for the Technology Development program have been based on preliminary requirements established by DOE-Office of Civilian Radioactive Waste Management for the geologic repository. Changes to the disposal requirements may impact the Technical Performance Requirements for the Treatment and Storage Facility project. However, EM is working closely with the Office of Civilian Radioactive Waste Management during their development of performance requirements to ensure, to the extent possible, that the melt and dilute disposal form will meet the final repository acceptance requirements as eventually approved by the Nuclear Regulatory Commission.

Although the technology development program is funded separately from the Treatment and Storage Facility project, it is directed by the same program management organization. This will ensure that the project is, and will continue to be, closely integrated with the technology development program.

▶ Regulatory/Design Basis Risk

Potential future movement toward the Nuclear Regulatory Commission regulation of DOE nuclear facilities presents a cost and schedule risk to the Treatment and Storage Facility project, which is currently planned and estimated as a DOE regulated facility. However, the new construction portion of the project (e.g., the dry storage facility) will be constructed to Nuclear Regulatory Commission licensing standards.

▶ Acquisition Strategy Risk

The Treatment and Storage Facility project will be accomplished under separate design only and construction projects in FY 2000 and FY 2003, respectively. The design only process will be accomplished in two parts: non-process related (interim dry storage modules and support utilities) which will begin in early FY 2000, and melt and dilute process design integration into the 105-L facility - which will begin later in the fiscal year with input from the L-Area pilot demonstration as discussed above. Both design efforts will be integrated into validating/baselining the FY 2003 construction project.

▶ Design Maturity Risk

Design maturity risk is minimal for the design project as a result of previous technology development work, input to be received from the L-Area pilot demonstration, and the standard nature of the design for the dry storage facility. As a result of the two-phased acquisition strategy, subsequent validations of the construction project will be based on a more mature design effort (e.g., 35 percent design completion).

4. Details of Cost Estimate

	(dollars in thousands)	
	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (81.1% of total estimate cost (TEC))	15,000	NA
Design management costs (1.6% of TEC)	300	NA
Project management (design) (1.1% of TEC)	200	NA
Total, engineering, design, inspection and administration of construction costs (83.8% of TEC)	15,500	NA
Contingencies		
Design phase (16.2% of TEC)	3,000	NA
Total, contingencies (16.2% of TEC)	3,000	NA
Total, line item costs (TEC)	18,500	NA

5. Method of Performance

Design shall be performed under a negotiated architect or engineer contract supported by operating contractor engineering for existing SSC's.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	FY 2001	Outyears	Total
Project cost							
Facility Cost							
Design	0	0	0	5,000	9,000	4,500	18,500
Total facility costs (Federal and Non-Federal)	0	0	0	5,000	9,000	4,500	18,500
Other project costs							
Other project-related costs	0	0	900	4,500	3,000	1,500	9,900
Total other project costs	0	0	900	4,500	3,000	1,500	9,900
Total project costs (TPC)	0	0	900	9,500	12,000	6,000	28,400

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	NA	NA
Annual facility maintenance and repair costs	NA	NA
Programmatic operating expenses directly related to the facility	NA	NA
Capital equipment not related to construction but related to the programmatic effort in the facility	NA	NA
GPP or other construction related to the programmatic effort in the facility	NA	NA
Utility costs	NA	NA
Other costs	NA	NA
Total related annual funding ^a	NA	NA

^aThis is a construction line-item design only project; therefore, there are no operating costs.

99-D-403, Privatization Phase I Infrastructure Support, Richland, Washington (RL-TW08)

(Changes from FY 1999 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 1999 Budget Request (<i>Preliminary Estimate</i>)	1Q 1999	1Q 2000	1Q 1999	1Q 2001	30,880	39,000
FY 2000 Budget Request (<i>Current Baseline Estimate</i>)	"	2Q 2002	3Q 1999	1Q 2002	"	"

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
1999	970	970	600
2000	0	0	370
Construction			
1999	13,830	13,830	5,955
2000	13,988	13,988	12,125
2001	2,092	2,092	8,665
2002	0	0	3,165

3. Project Description, Justification and Scope

As part of the Tank Waste Remediation System Privatization Phase I Contract, the United States Department of Energy committed to deliver key utilities and service to the privatization contractor's Low Activity Waste treatment facility. This project will provide the necessary site infrastructure and interface function to meet the commitments. The privatization facility will be located near the southeast corner of the 200 East Area in an area formerly identified for low activity waste grout storage/disposal.

Electrical service (normal power) of up to 20mW will be provided to the privatization facility through a new 230-13.BkV substation located in the 200 East Area.

Raw water, fire suppression and potable water services will be provided the privatization facility through the extension and upgrading of existing 200 East Area water systems.

Effluent transfer piping for non-dangerous effluents will be constructed and installed between the privatization facility and existing liquid effluent piping systems serving the 200 East Area Treated Effluent Disposal Facility and the Liquid Effluent Retention Facility along the east perimeter of the 200 East Area.

Other subprojects provide new roadway construction, extension of temporary power and of raw water to the privatized site and other tasks to prepare the site for eventual privatization construction activities (January 2000) and operations (June 2002). This task will also include the closure and/or replacement of selected wells on the site, rough surface contouring, habitat mitigation, establishment of a site characterization baseline and the development of selected areas for utility corridors and roadways.

The project is essential to supporting numerous Tri-Party Agreement milestones related to pretreatment and immobilization of Low Activity Tank Waste; specifically, those associated with the construction and operations of the Phase I Low Activity Waste facilities, M-60-11, "Start of construction of two (2) Phase I Low Activity Waste facilities..." and M-60-12, "Start operation of two (2) contractor-owned...Phase I Low Activity Waste facilities..." However, the Department decided to proceed with only one treatment facility.

Startup and testing activities will be completed when the liquid effluent transfer lines become operational in FY 2001. All other utilities/service upgrades will be completed in FY 2000. Final roadwork, topping, etc. will be deferred until the privatization contractor has completed construction in FY 2002.

The FY 2000 appropriation will be used to finalize site development and installation of construction utilities, turnover of the site to Privatization Contractor, and finalize construction of production utilities.

4. Details of Cost Estimate

(dollars in thousands)

Current Estimate	Previous Estimate
------------------	-------------------

Design phase

Environmental Management/Defense Environmental Restoration and Waste Management/Post 2006 Completion/99-D-403--Privatization Phase I Infrastructure Support

FY 2000 Congressional Budget

	(dollars in thousands)	
Preliminary and final design costs (2.1% of total estimated cost (TEC))	650	650
Design management costs (0.5 % of TEC)	150	150
Total, Engineering, design, inspection, and administration of construction costs (2.6% of TEC) . .	<u>800</u>	<u>800</u>
Construction phase		
Buildings and improvements to land	3,273	3,273
Specialized equipment	0	0
Other (major utilities/comp items, specialized facilities, etc.)	16,547	16,517
Removal cost less salvage	0	0
Project management	1,130	0
Inspection, design and project liaison, testing, checkout and acceptance	1,370	1,400
Construction management (10% of TEC)	3,100	4,230
Total, construction costs	<u>25,420</u>	<u>25,420</u>
Contingencies		
Design phase (0.6% of TEC)	170	170
Construction phase (14.5% of TEC)	4,490	4,490
Total, contingencies (15.1 % of TEC)	<u>4,660</u>	<u>4,660</u>
Total, line item costs (TEC)	<u>30,880</u>	<u>30,880</u>

5. Method of Performance

Design/inspection and construction will be accomplished using either fixed price design/construct contracts or selected design agent contracts with separate fixed price construction contracts.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	FY 2001	Outyears	Total
Project cost							
Facility Cost							
Design	0	0	600	370	0	0	970
Construction	0	0	5,955	12,125	8,665	3,165	29,910
Total facility costs (Federal and Non-Federal)	0	0	6,555	12,495	8,665	3,165	30,880
Other project costs							0
Conceptual design cost	555	0	0	0	0	0	555
NEPA documentation costs	0	0	0	0	0	0	0
Other project-related costs	2,147	2,326	1,020	1,870	202	0	7,565
Total other project costs	2,702	2,326	1,020	1,870	202	0	8,120
Total project costs	2,702	2,326	7,575	14,365	8,867	3,165	39,000

7. Related Annual Funding Requirements

(FY 2002 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc)	410	TBD
Annual facility maintenance and repair costs	0	0
Other annual funding	410	TBD
Total related annual funding (operating from FY 2002 through FY 2018)	820	0

97-D-402, Tank Farm Restoration and Safe Operations, Richland, Washington (RL-TW03)

(Changes from FY 1999 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 (<i>Preliminary Estimate</i>)	2Q 1997	2Q 2004	1Q 1999	3Q 2005	248,480	289,239
FY 1998 Budget Request (<i>Preliminary Estimate</i>)	“	3Q 2004	3Q 1998	3Q 2007	206,000	273,000
FY 1999 Budget Request (<i>Title I Baseline</i>)	“	“	1Q 1998	“	232,700	301,500
FY 2000 Budget Request (<i>Current Baseline Estimate</i>)	“	2Q 2004	“	“	“	“

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
1997	7,584	7,584	3,864
1998	6,500	6,500	5,933
1999	8,500	8,500	7,469
2000	13,000	13,000	12,567
2001	6,716	6,716	2,354
2002	0	0	10,113
Construction			
1997	0	0	0
1998	7,461	7,461	2,567
1999	14,223	14,223	5,416
2000	7,516	7,516	7,949
2001	25,460	25,460	29,822
2002	42,605	42,605	32,492
2003	33,810	33,810	33,810
2004	31,790	31,790	31,790
2005	26,790	26,790	26,790
2006	745	745	19,764

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 disposal privatization and routine operations of existing double-shell tank farm facilities (i.e., "Manage Tank Waste") during the Tank Waste Remediation System mission, but also supports initiatives related to single-shell tank stabilization. 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 Tank Waste Remediation System mission.

The Tank Farm Restoration and Safe Operations Major System Acquisition will provide major upgrades to Hanford's existing Tank Farm facilities in the following areas:

- Instrumentation

Existing primary tank monitoring instrumentation in the double-shell tank farms will be modified and upgraded for level, temperature, and vapor pressure measurement. The double-shell tank waste transfer system will be upgraded for routine verification and waste transfer verification. The leak

detection system associated with the annulus, leak detection pit, and process/support pits in these tank farms will be upgraded. The master pump shutdown system and associated alarms will also be upgraded. 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.

- 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, and replacement ventilation systems for the 244-A and 244-S Double Contained Receiver Tank facilities. 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.

- 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" (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 provide a decontaminable surface 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.

- Electrical Distribution

Existing electrical power supplies for the equipment supporting the double-shell tank primary/annulus ventilation systems and the 244-A/244-S Double Contained Receiver Tank 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. In addition, the project will upgrade the single-shell tank electrical power systems to support clean/controlled/stable operations. 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 disposal privatization and support the double-shell tank "Manage Tank Waste" 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 Tank Waste Remediation System 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 FY 2000 appropriation will be used to support continued Phase I construction activities associated with the project management activities.

4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (15.4% of total estimated cost (TEC))	35,850	48,640
Design management costs (0.0 % of TEC)	0	0
Total, Engineering, design, inspection, and administration of construction costs (15.4% of TEC) .	35,850	48,640
Construction phase		
Buildings and improvements to land	130	130
Specialized equipment	97,930	88,120
Other (major utilities/comp items, specialized facilities, etc.)	4,510	4,510
Removal cost less salvage	4,510	4,510
Project management	19,945	9,490
Inspection, design and project liaison, testing, checkout and acceptance	24,570	21,590
Construction management (1.4% of TEC)	3,345	13,800
Total, construction costs	154,940	142,150
Contingencies		
Design phase (2.8% of TEC)	6,450	7,900
Construction phase (15.4% of TEC)	35,460	34,010
Total, contingencies (18.0 % of TEC)	41,910	41,910
Total, line item costs (TEC)	232,700	232,700

5. Method of Performance

The Project Hanford Management Contractor will be responsible for overall project management and integration services for the Tank Farm Restoration and Safe Operations project, as well as for coordination of permitting and safety analysis work in support of the project. Definitive design, inspection, and construction management activities will be performed by the contracted Engineer/Constructor Contractor. 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 Project Hanford Management Contractor.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	FY 2001	Outyears	Total
Project cost							
Facility cost							
Design	3,864	5,933	7,469	12,567	2,354	10,113	42,300
Construction	0	2,567	5,416	7,949	29,822	144,646	190,400
Total facility costs (Federal and Non-Federal) ...	3,864	8,500	12,885	20,516	32,176	154,759	232,700
Other project costs							
Conceptual design cost	13,324	0	0	0	0	0	13,324
NEPA documentation costs	12	0	0	0	0	0	12
Other project-related costs	11,470	1,790	5,700	5,700	8,262	22,542	55,464
Total other project costs	24,806	1,790	5,700	5,700	8,262	22,542	68,800
Total project costs (TPC)	28,670	10,290	18,585	26,216	40,438	177,301	301,500

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, Richland, Washington (RL-TW04)

(Changes from FY 1999 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- # Determination which of Hanford’s twenty-eight double-shell tanks will receive retrieval systems by this project has been revised to reflect programmatic requirements supporting Phase I privatization. Two tanks have been removed from the project: one because only supernate liquids are to be transferred from the tank, eliminating the need for mixer pumps; and another because of issues requiring further research and development related to mixing waste with failed equipment lying on the bottom of the tank. A tank that will receive waste returning from the privatized treatment facility has been added to the project.
- # The schedule has been revised to meet programmatic requirements supporting Phase I privatization.

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 1994 Budget Request (<i>Preliminary Estimate</i>)	2Q 1994	4Q 1998	1Q 1995	2Q 2000	210,000	245,000
FY 1995 Budget Request (<i>Preliminary Estimate</i>)	“	4Q 1999	4Q 1995	2Q 2001	“	“
FY 1996 Budget Request (<i>Preliminary Estimate</i>)	“	2Q 2008	3Q 1996	2Q 2010	315,100	375,200
FY 1997 Budget Request (<i>Preliminary Estimate</i>)	4Q 1994	4Q 2007	4Q 1996	“	304,300	358,200
FY 1998 Budget Request (<i>Title I Baseline</i>)	“	4Q 2004	2Q 1997	3Q 2008	202,000	229,100
FY 1999 Budget Request (<i>Title I Baseline</i>)	“	4Q 2000	1Q 1999	2Q 2005	“	“
FY 2000 Budget Request (<i>Current Baseline Estimate</i>)	“	4Q 2004	1Q 2001	2Q 2010	“	“

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
1994	1,000 ^a	1,000	509
1995	3,380 ^b	3,380	3,151
1996	5,600 ^c	5,600	2,659
1997	5,100 ^d	5,100	4,103
1998	5,600 ^e	5,600	4,771
1999	4,661 ^f	4,100	4,100
2000	4,060	4,060	4,060
2001	4,800	4,800	5,192
2002	4,199	4,760	5,110
2003			4,745
Construction			
1994	0	0	0
1995	0	0	0
1996	0	0	0
1997	2,500 ^d	2,500	2,128
1998	4,500	4,500	2,950
1999	28,199 ^f	28,199	0
2000	0	0	0
2001	19,100	19,100	18,708
2002	23,940	23,940	25,510
2003	26,600	26,600	23,955

^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 defense rescission from original appropriation of \$17,700,000.

^c Reflects reduction of \$6,400,000 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 No. 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 negotiations were completed and a Phase 1B contract was signed (August, 1998).

^f Does not reflect reduction of \$560,730 for uncosted reduction from original appropriation of \$32,860,000.

**Environmental Management/Defense Environmental
Restoration and Waste Management/Post 2006 Completion/
94-D-407--Initial Tank Retrieval Systems**

FY 2000 Congressional Budget

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2004	20,900	20,900	26,600
2005	14,900	14,900	20,900
2006	11,300	11,300	14,900
2007	11,661	11,661	11,300
2008	0	0	15,400
2009	0	0	1,249

3. Project Description, Justification and Scope

The Initial Tank Retrieval Systems project will provide mixing and pumping systems for retrieval of radioactive wastes from ten of Hanford's 28 double-shell tanks. The contents of these tanks consist of supernatant liquids and settled solids, which must be mixed prior to transferring the waste to treatment facilities or alternative storage. The Initial Tank Retrieval Systems will provide systems to mobilize settled solids and transfer wastes out of the tanks to provide feed to future processing plants, and allow near-term consolidation of tank wastes to restore useable double-shell tank storage capacity. This double-shell tank storage space is required to allow safe storage of alternate waste streams, such as waste from the single-shell tanks. Additionally, the dilution and waste removal capabilities provided by Initial Tank Retrieval Systems will remediate the flammable gas issue in several of the flammable gas watch list double-shell tanks.

Existing equipment installed in the double-shell tanks only allows the removal and transfer of supernatant liquids, and is incapable of suspending and removing the settled solids. Without the waste mixing, dilution, and removal functions provided by the Initial Tank Retrieval Systems, there will be no ability to provide feed to future processing plants, consolidate waste solids, and remediate flammable gas issues.

The typical retrieval system for the ten 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. Remote decontamination equipment and disposable containment equipment will be utilized for removal and disposal of tank components.

The FY 2000 budget request will be used for continuing design of three retrieval systems and associated project management.

4. Details of Cost Estimate ^{a b}

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (12.6% of total estimated cost (TEC))	25,520	25,520
Design management costs (3.6 % of TEC)	7,250	7,250
Total, Engineering, design, inspection, and administration of construction costs (16.2% of TEC)	32,770	32,770
Construction phase		
Buildings and improvements to land	1,380	1,380
Specialized equipment	79,590	79,590
Other (major utilities/comp items, specialized facilities, etc.)	24,570	24,570
Removal cost less salvage	5,630	5,630
Project management	4,900	4,900
Inspection, design and project liaison, testing, checkout and acceptance	10,910	10,910
Construction management (3.3% of TEC)	6,750	6,750
Total, construction costs	133,730	133,730
Contingencies		
Design phase (2.8% of TEC)	5,630	5,630
Construction phase (14.8% of TEC)	29,870	29,870
Total, Contingencies (17.6 % of TEC)	35,500	35,500
Total, line item costs (TEC)	202,000	202,000

5. Method of Performance

The project is managed for Richland by the Project Hanford Management Contractor.

^a Estimate is based on the Title I design estimate, dated January 1996 and as modified to incorporate change requests and modification of the list of tanks to receive retrieval systems to meet the Waste Feed Delivery mission.

^b Escalation rates were calculated from the February 1995 update of the economic escalation price change indices for DOE construction projects by the "Office of Infrastructure Acquisition, FM-50".

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	Outyears	Total
Project cost						
Facility Cost						
Design	10,422	4,771	4,100	4,060	15,047	38,400
Construction	2,128	2,950	0	0	158,522	163,600
Total facility costs (Federal and Non-Federal)	12,550	7,721	4,100	4,060	173,569	202,000
Other project costs						
Conceptual design cost	1,609	0	0	0	0	1,609
NEPA documentation costs	10	0	0	0	0	10
Other project-related costs	4,884	1,480	1,150	4,600	13,367	25,481
Total other project costs	6,503	1,480	1,150	4,600	13,367	27,100
Total project costs (TPC)	19,053	9,201	5,250	8,660	186,936	229,100

7. Related Annual Funding Requirements

(FY 2005 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.)	250	250
Annual facility maintenance and repair costs	50	50
Total related annual funding (<i>operating from FY 2005 through FY 2018</i>)	300	300

93-D-187, High-Level Waste Removal from Filled Waste Tanks, Savannah River, Aiken, South Carolina (SR-HL12)

(Changes from FY 1999 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- # Tank Farm Support Service Upgrades scope of work has been adjusted to facilitate improved project management and work execution between this line item project and project 99-D-402, "Tank Farm Support Services, F Area".
- # All F Tank Farm Support Service Upgrade work scope has been transferred to project 99-D-402.
- # All H Tank Farm Support Service Upgrade work scope has been consolidated into this line item project.
- # The planned rebaselining of this line item project will reflect the scope deletions and additions. This rebaselining is currently scheduled for completion in the second quarter of FY 1999. Revised total estimated cost/total project cost annual spending projections will be made as part of the FY 2001 Budget submission.
- # FY 2000 funding request does not include allowance for Salt Disposition Process Upgrades. Alternative studies are underway to determine the best approach. Additional funding will be requested when the approach decision is made.

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 (<i>Title I Baseline</i>)	2Q 1993	1Q 1994	3Q 1994	4Q 1999	86,500	88,640
FY 1994 Budget Request (<i>Title I Baseline</i>)	"	"	"	"	"	"
FY 1995 Budget Request (<i>Title I Baseline</i>)	1Q 1979	4Q 1999	2Q 1980	3Q 2005	602,700	991,446
FY 1996 Budget Request (<i>Title I Baseline</i>)	"	2Q 2006	"	4Q 2008	565,050	828,238
FY 1997 Budget Request (<i>Title I Baseline</i>)	"	"	"	"	"	"
FY 1998 Budget Request (<i>Current Baseline Estimate</i>)	"	4Q 2006	"	"	558,050	821,238
FY 1999 Budget Request (<i>Current Baseline Estimate</i>)	"	"	"	"	"	"
FY 2000 Budget Request (<i>Current Baseline Estimate</i>)	"	"	"	"	"	"

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
1993	0	0	0
1994	70,000 ^a	70,000	70,000
1995	6,269 ^a	6,269	6,269
1996	4,016	4,016	4,016
1997	4,415	4,415	4,415
1998	4,500	4,500	5,106
1999	5,781	5,781	5,781
2000	1,000	1,000	1,000
Outyears	43,026	43,026	42,420
Construction			
1993	2,000 ^a	0	0
1994	116,802 ^a	118,802	114,117
1995	16,406 ^{a b}	16,406	18,964
1996	15,684	15,684	11,364
1997	8,585 ^c	8,585	13,785
1998	13,720 ^d	13,720	12,101
1999	9,433	9,433	9,433
2000	7,987	7,987	7,987
Outyears	228,426	228,426	231,292

^a This represents the operating expense funded costs through FY 1994 of the three previously operating expense funded projects. Also, represents the actual operating expense funded costs through 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 \$700,000. The original appropriation was \$17,520,000.

**Environmental Management/Defense Environmental
Restoration and Waste Management/Post 2006 Completion/
93-D-187 -- High-Level Waste Removal from Filled Waste
Tanks**

FY 2000 Congressional Budget

3. Project Description, Justification and Scope

The purpose of this project is for removal and processing of waste which is essential for maintaining the Defense Waste Processing Facility operations to meet Federal Facilities Compliance Agreement, waste processing commitments, and Savannah River Site commitments to minimize high-level liquid waste in storage, and to provide support for continued waste receipts. This project supports the Federal Facilities Agreement commitment to discontinue the use of waste tanks which do not provide adequate secondary containment (Type I, II, and IV tanks).

The High-Level Waste Removal from Filled Waste Tanks line item project is broken into two subprojects. The first subproject, S-W183 "Waste Removal" provides the facilities necessary to remove waste from tanks and the second subproject, S-7719 "Processing Facility Upgrades" provides processing upgrades required to support future processing requirements. It is expected that additional subprojects will be added over the life of the High-Level Waste System.

The Waste Removal subproject had previously been divided into four subprojects (S-2081, Waste Removal Phase II; S-3291, Type III Tank Salt Removal, Tank Salt Removal Phase I; S-2860, Type III Tank Salt Removal Phase II; and S-3025, Waste Removal Facilities Phase III) with additional scope slated to be added in the future. These subprojects were combined into one single subproject "Waste Removal" to reduce project management/project control requirements via implementation of a simpler and more efficient work breakdown structure. In general, the waste removal facilities include slurry pumps, transfer pumps, transfer jets, structural support steel and associated instrumentation, and distributed control systems. The project will provide equipment so that salt and/or sludge can be removed and transferred to either Salt Processing or Extended Sludge Processing for eventual feed to the Defense Waste Processing Facility. The waste removal process will be performed and funded by operating funds. The project, however, will provide the modifications to tank systems and services, as necessary, to isolate tanks from the waste removal process prior to tank closure.

The FY 2000 funds for this project will support design and construction consistent with the High-Level Waste System Plan, including completion of the West Hill engineering and inspection upgrades construction, initiation of design for tanks 7F and 11F, and continue engineering and inspection upgrades for H Area.

The waste removal facilities for nine additional Type III F and H tanks will be added to Waste Removal subproject in the rebaselining effort.

The "Processing Facilities Upgrade" subproject S-7719 will include facility modifications to Defense Waste Processing Facility, Salt Processing, Saltstone, and Effluent Treatment Facility in order to allow the efficient processing of salt and sludge waste through the High-Level Waste System. These upgrades have not been fully defined and will be necessary throughout the life of the High-Level Waste System. The first of these upgrades includes upgrades in Defense Waste Processing Facility to support the processing of higher curie content sludge. Salt Disposition alternative studies are underway to determine the best approach. The next upgrade will implement the recommendations from the salt disposition alternative studies that are underway to determine the best approach to salt processing from a safety, cost, and schedule standpoint. It is expected that other process modifications will be required in the future.

If funds are not appropriated for this project, the plant will not meet the required Federal Facilities Agreement and Site Treatment Plan regulatory commitments and Defense Waste Processing Facility will not have the feed necessary to operate.

4. Details of Cost Estimate ^a

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design phase		
Preliminary and final design costs (20.7% of total estimated cost (TEC))	115,525	122,468
Design management costs (1.3% of TEC)	7,374	0
Total, engineering, design, inspection, and administration of construction costs (22.0% of TEC)	122,899	122,468
Construction phase		
Buildings & improvements to land	6,936	6,936
Specialized equipment	213,163	212,732
Other (major utilities/comp items, specialized facilities, etc.)	96,798	96,798
Removal cost less salvage	12,000	12,000
Inspection, design and project liaison, testing, checkout and acceptance	21,952	21,984
Construction management (3.5% of TEC)	19,636	19,667
Total, construction costs	370,485	370,117
Contingencies		
Design phase (2.9% of TEC)	16,108	38,332
Construction phase (8.7% of TEC)	48,558	27,133
Total, contingencies (11.6% of TEC)	64,666	65,465
Total, line item costs (TEC)	558,050	558,050

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.

^a The cost estimate basis for this project is a combination of Title I and Conceptual Design Report estimates. Costs and schedule for the nine additional tanks are not included in this estimate but will be included in the rebaselining effort.

The DOE escalation rates (percent per year) used for this estimate are as follows: FY 1993-2.4%; FY 1994-2.5%; FY 1995-3.5%; FY 1996-3.5%; FY 1997 3.5%; FY 1998 3.5%; FY 1999 3.3%; FY 2000 3.3%; Outyears 3.3%.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1998	FY 1999	FY 2000	Outyears	Total
Project cost						
Facility cost						
Design	84,700	5,106	5,781	1,000	42,420	139,007
Construction	158,230	12,101	9,433	7,987	231,292	419,043
Total facility costs (Federal and Non-Federal)	242,930	17,207	15,214	8,987	273,712	558,050
Other project costs						
Conceptual design cost	800	0	0	0	0	800
Other project-related costs ^a	24,916	5,725	7,846	5,446	218,455	262,388
Total other project costs	25,716	5,725	7,846	5,446	218,455	263,188
Total project costs (TPC)	268,646	22,932	23,060	14,433	492,167	821,238

7. Related Annual Funding Requirements

(FY 1998 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.) ^b	6,650	6,100
Annual facility maintenance and repair costs	2,850	2,000
Other annual costs	0	500
Total related annual funding (<i>operating from FY 1998 through FY 2010</i>)	9,500	8,600

^a Includes \$262,388,000 to fund permitting activities, Post Modification Testing Reviews, one-time program development startup, and operating contractor project support.

^b Includes operating manpower, supplies and energy and additional operators. It is essential that 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.