Defense Site Acceleration Completion

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense site acceleration completion activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; $5,814,635,000 to remain available until expended.

Note.—A Regular 2003 appropriation for this account had not been enacted at the time the budget was prepared; therefore, this account is operating under a continuing resolution (P.L. 107–229, as amended). The amounts in cluded for 2003 in this budget reflect the Administration's 2003 policy proposals.

Explanation of Change

This appropriation reflects EM's new budget structure supporting the budget formulation and execution of the accelerated risk reduction and cleanup initiative. The new budget structure focuses resources on risk reduction and closure and clearly delineates how resources will be utilized (i.e., for direct cleanup activities or for other activities indirectly related to cleanup activities.) In the FY 2004 budget, this appropriation consolidates into a single appropriation funding for direct defense-related accelerated cleanup and risk reduction activities.

Defense Site Acceleration Completion

Program Mission

The Environmental Management (EM) program is responsible for managing and addressing the environmental legacy resulting from the production of nuclear weapons and nuclear research. The nuclear weapons complex generated waste, pollution, and contamination which pose unique problems, including unprecedented volumes of contaminated soil and water, radiological hazards from special nuclear material, and a vast number of contaminated structures. Factories, laboratories, and thousands of square miles of land were devoted to the enterprise of producing tens of thousands of nuclear weapons in support of national security. Much of this massive infrastructure, waste, and contamination still exists, much of which is now the responsibility of the EM program to manage and remediate. Environmental Management's responsibilities include facilities and areas at 114 geographic sites. These sites are located in 31 states and one territory and occupy an area equal to that of Rhode Island and Delaware combined -- or about two million acres.

The FY 2004 request for the Defense Site Acceleration Completion appropriation is $5,814,635,000, an increase of $194,292,000 from the comparable FY 2003 Request of $5,620,343,000.

Program Strategic Performance Goals

Environmental Management is aggressively transitioning from a program based on risk management and containment to one focused on accelerated risk reduction and cleanup. Performance measurement is integral to the success of the EM program in achieving its accelerated risk reduction and cleanup objectives. Environmental Management’s Program Strategic Performance Goals which reflects the new EM focus on accelerated risk reduction and cleanup are:

1. Complete geographic site cleanup at 89 of 114 cleanup sites by the end of FY 2006. Continue cleanup at the remaining sites, including the five largest sites, scheduled for completion in the post 2006 timeframe.

Performance Indicators:

- Number of geographic sites completed.
- Number of release sites remediated
- Number of nuclear facilities completed.
- Number of radioactive facilities completed.
- Number of industrial facility completed.
- Number of material access areas eliminated.

2. Safely and expeditiously dispose of waste generated during past and current DOE activities. Continue shipment of transuranic waste for disposal at the Waste Isolation Pilot Plant.

Performance Indicators:

- Liquid waste eliminated (millions of gallons).
- Number of liquid tanks closed.
- Canisters of high-level waste packaged for final disposition.
- Transuranic waste shipped for disposal at the Waste Isolation Pilot Plant (cubic meters).
- Low-level waste/mixed low-level waste disposed (cubic meters).

3. Stabilize nuclear material and spent nuclear fuel by producing safer chemical and/or physical forms of the material, and reduce the level of potential risk to personnel from radiation exposure and to the environment from contamination.

Performance Indicators:

- Certified DOE storage/treatment/disposal 3013 containers (or equivalent) of plutonium metal or oxide packaged ready for long-term storage.
- Certified containers of enriched uranium packaged ready for long-term storage.
- Plutonium or uranium residues packaged for disposition (kg of bulk material).
- Spent Nuclear Fuel packaged for final disposition (metric tonnes heavy metal).
- Depleted and other Uranium packaged for disposition (metric tonnes).

Annual Performance Results and Targets [a]

	FY 2002 Actuals	FY 2003 Estimate	FY 2004 Estimate
Defense Site Acceleration Completion			
Plutonium Metal or Oxide Packaged for Long-Term Storage - Number of Containers	1,022	2,836	923
Enriched Uranium Packaged for Long-Term Storage - Number of Containers	0	293	1,310
Plutonium or Uranium Residues Packaged for Disposition (kg/bulk)	17,814	934	254
Depleted and Other Uranium Packaged for Disposition (metric tonnes)	0	1,815	0
Liquid Waste in Inventory Eliminated - thousands of gallons	0	700	1,300
Liquid Waste Tanks Closed - Number of Tanks	0	1	9
High-Level Waste Packaged for Final Disposal - Number of Containers	160	130	250
Spent Nuclear Fuel Packaged for Final Disposition - MTHM	511	857	632
Transuranic Waste Shipped for Disposal at WIPP (m^3)	5,122	4,124	12,065
Low-Level and Mixed Low-Level Waste Disposed (m^3)	100,723	68,764	87,231
Material Access Areas Eliminated - Number of Areas	0	0	1
Nuclear Facility Completions - Number of Facilities	1	2	5
Radioactive Facility Completions - Number of Facilities	16	7	32
Industrial Facility Completions - Number of Facilities	100	36	84
Remediation Complete - Number of Release Sites	106	167	147

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

Funding Profile

(dollars in thousands)

	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Defense Site Acceleration Completion					
2006 Accelerated Completions	1,207,401	1,231,911	1,245,171	13,260	1.1%
2012 Accelerated Completions	2,075,289	2,192,088	2,228,314	36,226	1.7%
2035 Accelerated Completions	1,627,631	1,884,074	1,978,597	94,523	5.0%
Safeguards and Security	244,361	221,614	299,977	78,363	35.4%
Technology Development and Deployment	200,189	92,000	63,920	-28,080	-30.5%
Subtotal, Defense Site Acceleration Completion	5,354,871	5,621,687	5,815,979	194,292	3.5%
Use of Prior Year Balances	-67,580	0	0	0	0.0%
Reimbursable Work	-1,547	-1,344	-1,344	0	0.0%
General Reduction	0	0	0	0	0.0%
Dupont Pension Refund	-5,099	0	0	0	0.0%
Total, Defense Site Acceleration Completion	5,280,645	5,620,343	5,814,635	194,292	3.5%

Public Law Authorization:

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

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

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

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

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

Public Law 107-66, “The Energy and Water Development Appropriations Act, 2002"

Funding by Site

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Carlsbad Field Office					
Waste Isolation Pilot Plant	189,611	185,790	191,696	5,906	3.2%
Idaho Operations Office					
Idaho National Engineering and Environmental Laboratory	446,950	514,324	524,392	10,068	2.0%
Idaho Operations Office	11,600	4,338	0	-4,338	-100.0%
Total, Idaho Operations Office	458,550	518,662	524,392	5,730	1.1%

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Oak Ridge Operations Office					
East Tennessee Technology Park	2,918	4,585	5,665	1,080	23.6%
Oak Ridge National Laboratory	31,387	45,075	41,772	-3,303	-7.3%
Oak Ridge Reservation	181,135	192,831	193,116	285	0.1%
Y-12 Plant	55,298	22,888	46,689	23,801	104.0%
Total, Oak Ridge Operations Office	270,738	265,379	287,242	21,863	8.2%
Ohio Field Office					
Ashtabula	16,000	16,000	15,970	-30	-0.2%
Columbus	16,100	21,100	23,058	1,958	9.3%
Fernald	285,391	322,418	321,942	-476	-0.1%
Miamisburg	95,423	99,378	98,527	-851	-0.9%
West Valley	2,245	2,210	2,570	360	16.3%
Ohio Field Office	12,560	0	0	0	0.0%
Total, Ohio Field Office	427,719	461,106	462,067	961	0.2%
Paducah					
Paducah Gaseous Diffusion Plant	4,103	6,849	6,993	144	2.1%
Portsmouth					
Portsmouth Gaseous Diffusion Plant	13,646	11,917	16,116	4,199	35.2%
Richland Operations Office					
Hanford Site	743,009	801,321	905,787	104,466	13.0%
Office of River Protection					
River Protection	1,023,484	1,126,858	1,079,316	-47,542	-4.2%
Rocky Flats Field Office					
Rocky Flats Environmental Technology Site	657,911	657,122	658,201	1,079	0.2%
Savannah River Operations Office					
Savannah River Operations Office	8,519	0	0	0	0.0%
Savannah River Site	1,132,591	1,227,676	1,337,303	109,627	8.9%
Total, Savannah River Operations Office	1,141,110	1,227,676	1,337,303	109,627	8.9%
Technology Development and Deployment	200,189	92,000	63,920	-28,080	0.0%

	(dollars in thousands)				
	FY 2002	FY 2003	FY 2004	$ Change	% Change
Various Locations					
Albuquerque Operations Office	8,100	0	0	0	0.0%
Kansas City Plant	2,475	2,370	2,095	-275	-11.6%
Los Alamos National Laboratory	74,047	99,823	116,165	16,342	16.4%
Pantex Plant	13,547	15,618	21,433	5,815	37.2%
Sandia National Laboratory	21,992	24,773	22,097	-2,676	-10.8%
Nevada Offsites	5,770	6,603	8,565	1,962	29.7%
Nevada Operations Office	4,454	5,967	5,438	-529	-8.9%
Nevada Test Site	71,098	76,615	72,805	-3,810	-5.0%
Lawrence Livermore National Laboratory	20,956	30,389	28,318	-2,071	-6.8%
Oakland Operations Office	1,157	520	465	-55	-10.6%
Separations Process Research Unit	1,205	4,329	5,565	1,236	28.6%
Total, Various Locations	224,801	267,007	282,946	15,939	6.0%
Subtotal, Defense Site Acceleration Completion	5,354,871	5,621,687	5,815,979	194,292	3.5%
Use of Prior Year Balances	-67,580	0	0	0	0.0%
Reimbursable Work	-1,547	-1,344	-1,344	0	0.0%
Dupont Pension Offset	-5,099	0	0	0	0.0%
Total, Defense Site Acceleration Completion	5,280,645	5,620,343	5,814,635	194,292	3.5%

2006 Accelerated Completions

Mission Supporting Goals and Measures

The Defense Site Acceleration, 2006 Accelerated Completions account provides funding for completing cleanup and closing down facilities contaminated as a result of nuclear weapons production. This account includes all geographic sites with an Accelerated Cleanup Plan closure date of 2006 or earlier (e.g., Rocky Flats, Fernald). In addition, this account provides funding for Environmental Management sites where overall site cleanup will not be completed by 2006 but cleanup projects within a site (e.g., spent fuel removal, all transuranic waste shipped off-site) will be completed by 2006.

Subprogram Goals

Accelerating risk reduction and cleanup is the central focus of the EM program. Funding in this account is focused on completing risk reduction and cleanup activities at sites with a closure date of 2006 or earlier. Additionally, this account supports cleanup projects at sites where the overall cleanup will not be completed by 2006 but specific projects will be completed by 2006.

Since submittal of the FY 2003 Congressional Budget, EM has made substantial progress towards defining the accelerating risk reduction and cleanup strategies at each of its sites. Letters of Intent have been signed with many of our state and Environmental Protection Agency regulatory authorities. These Letters of Intent lay the foundation to move forward with the implementation of EM's accelerated risk reduction and cleanup strategies. Using the Letters of Intent as a basis, Performance Management Plans were then developed. These Performance Management Plans articulate the strategies, key milestones, and commitments that demonstrate sites are accelerating risk reduction and cleanup. From the Performance Management Plans, resource loaded project baselines will be developed that EM will use to manage and track risk reduction and real cleanup progress at its sites. These baselines are expected to be completed during FY 2003.

Performance Indicators

Performance measurement is integral to the success of the EM program in achieving its accelerated risk reduction and cleanup goals. Performance measurement of the EM program consists of "corporate" measures that provide a comprehensive programmatic perspective on progress as well as site and project-specific milestones which are used to demonstrate whether a project and site are on track to achieve its agreed to expectations and schedule. In October 2002, the Assistant Secretary for Environmental Management established a new set of corporate performance measures for the program. The corporate measures are quantitative and focus on the completion of sites, the interim steps necessary to complete sites, and the accomplishment of risk-reduction activities. These new measures, which are under strict EM Headquarters change control, will enable EM to comprehensively track progress against its accelerated risk reduction and closure objectives. In addition, these corporate measures are tracked in the context of the life-cycle total necessary to complete each site as well as the EM program as a whole.

Environmental Management is currently in the process of establishing site resource-loaded baselines which are expected to be completed during FY 2003. The establishment of these site baselines will enable the program to more meaningfully monitor and evaluate actual performance against the new accelerated baselines. Environmental Management believes significant strides have been made in its ability to monitor and demonstrate performance through the establishment of new corporate measures, implementation of a strict configuration management system, and the expected completion of new accelerated site baselines in FY 2003. Environmental Management acknowledges that the program needs to continue to improve upon the progress made to date to further develop project management techniques and associated cost and schedule performance measures. This will enable EM to demonstrate more clearly performance in meeting the program goals of accelerated risk reduction and site cleanup, thereby reducing life-cycle costs.

The EM corporate performance measures are:

- Number of Containers of Plutonium Metal/Oxide Stabilized and Packaged for Long-Term Storage;
- Kilograms of Enriched Uranium Stabilized and Packaged for Long-Term Storage;
- Number of Material Access Areas Eliminated;
- Kilograms Bulk of Plutonium Residues Stabilized, Packaged and Disposed;
- Cubic Meters of Transuranic Waste Stabilized, Packaged and Disposed;
- Kilograms of Depleted Uranium Packaged and Disposed;
- Metric Tons of Spent Nuclear Fuel Packaged for Disposal;
- Canisters of High-Level Waste Processed, Packaged, and Disposed;
- Gallons of Liquid Waste Stabilized and Disposed;
- Number of Liquid Waste Tanks Closed;
- Number of EM Geographic Sites Eliminated;
- Cubic Meters of Low-Level/Low-Level Mixed Waste Packaged and Disposed;
- Number of Nuclear Buildings/Facilities Deactivated, Decommissioned, Demolished, or Transferred;
- Number of Radioactive Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred;
- Number of Industrial Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred; and
- Number of Release Sites Evaluated, Remediated, and Closed Out.

The corporate measures will be complemented by project-specific measures consistent with the site Performance Management Plans and Letters of Intent. Those project-specific measures are typically milestones that signify that project and site progress is sufficient to meet established schedules. Detailed performance measure and milestone information can be found in the site details that follow this program overview.

Annual Performance Results and Targets [a]

	FY 2002 Actuals	FY 2003 Estimate	FY 2004 Estimate
2006 Accelerated Completions			
Plutonium Metal or Oxide Packaged for Long-Term Storage - Number of Containers	922	716	0
Plutonium or Uranium Residues Packaged for Disposition - (kg/bulk)	15,994	0	0
Transuranic Waste Shipped for Disposal at WIPP (m^3)	2,903	2,153	2,344
Low-Level and Mixed Low-Level Waste Disposed (m^3)	5,388	45,376	62,050
Material Access Areas Eliminated - Number of Areas	0	0	1
Nuclear Facility Completions - Number of Facilities	0	0	1
Radioactive Facility Completions - Number of Facilities	12	6	21
Industrial Facility Completions - Number of Facilities	76	9	51
Remediation Complete - Number of Release Sites	17	16	31

Funding by Site

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Idaho Operations Office					
Idaho Operations Office	11,600	4,338	0	-4,338	-100.0%
Oak Ridge Operations Office					
Oak Ridge Reservation	79,929	98,851	121,625	22,774	23.0%
Ohio Field Office					
Ashtabula	16,000	16,000	15,970	-30	-0.2%
Columbus	16,100	21,100	23,058	1,958	9.3%
Fernald	280,690	319,528	317,997	-1,531	-0.5%
Miamisburg	89,645	94,700	94,634	-66	-0.1%
Ohio Field Office	12,560	0	0	0	0.0%
Total, Ohio Field Office	414,995	451,328	451,659	331	0.1%
Portsmouth					
Portsmouth Gaseous Diffusion Plant	2,000	0	0	0	0.0%
Rocky Flats Field Office					
Rocky Flats Environmental Technology Site	614,015	627,529	629,651	2,122	0.3%

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

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Savannah River Operations Office					
Savannah River Operations Office	8,519	0	0	0	0.0%
Savannah River Site	32,165	3,133	211	-2,922	-93.3%
Total, Savannah River Operations Office	40,684	3,133	211	-2,922	-93.3%
Various Locations					
Albuquerque Operations Office	8,100	0	0	0	0.0%
Kansas City Plant	2,475	2,370	2,095	-275	-11.6%
Sandia National Laboratory	21,992	24,773	22,097	-2,676	-10.8%
Lawrence Livermore National Laboratory	11,611	19,589	17,833	-1,756	-9.0%
Total, Various Locations	44,178	46,732	42,025	-4,707	-10.1%
Total, Defense Site Acceleration Completion, 2006 Accelerated Completions	1,207,401	1,231,911	1,245,171	13,260	1.1%

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
ID-OPS-0900 / Pre-2004 Completions	11,600	4,338	0	-4,338	-100.0%
OR-0013A / Solid Waste Stabilization and Disposition-2006	57,218	52,560	61,506	8,946	17.0%
OR-0030 / Soil and Water Remediation-Melton Valley	22,711	46,291	60,119	13,828	29.9%
OH-AB-0030 / Soil and Water Remediation-Ashtabula	16,000	16,000	15,970	-30	-0.2%
OH-CL-0040 / Nuclear Facility D&D-West Jefferson	16,100	21,100	23,058	1,958	9.3%
OH-FN-0013 / Solid Waste Stabilization and Disposition-Fernald	207,941	236,802	203,365	-33,437	-14.1%
OH-FN-0030 / Soil and Water Remediation-Fernald	45,264	65,982	67,884	1,902	2.9%
OH-FN-0050 / Non-Nuclear Facility D&D-Fernald	27,485	16,744	46,748	30,004	179.2%
OH-MB-0013 / Solid Waste Stabilization and Disposition-Miamisburg	22,294	17,592	18,359	767	4.4%
OH-MB-0030 / Soil and Water Remediation-Miamisburg	14,869	16,365	18,968	2,603	15.9%
OH-MB-0040 / Nuclear Facility D&D-Miamisburg	52,482	60,743	57,307	-3,436	-5.7%
OH-OPS-0900-D / Pre-2004 Completions	12,560	0	0	0	0.0%
PO-0900 / Pre-2004 Completions	2,000	0	0	0	0.0%
RF-0011 / NM Stabilization and Disposition	27,372	18,807	600	-18,207	-96.8%
RF-0013 / Solid Waste Stabilization and Disposition	104,701	105,700	86,953	-18,747	-17.7%

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
RF-0030 / Soil and Water Remediation	140,983	204,609	224,990	20,381	10.0%
RF-0040 / Nuclear Facility D&D-North Side Facility Closures	245,069	202,990	198,794	-4,196	-2.1%
RF-0041 / Nuclear Facility D&D-South Side Facility Closures	95,890	95,423	118,314	22,891	24.0%
SR-0011A / NM Stabilization and Disposition-2006	32,165	3,133	211	-2,922	-93.3%
SR-0900 / Pre-2004 Completions	8,519	0	0	0	0.0%
VL-FAO-0900 / Pre-2004 Completions	8,100	0	0	0	0.0%
VL-KCP-0030 / Soil and Water Remediation-Kansas City Plant	2,475	2,370	2,095	-275	-11.6%
VL-SN-0030 / Soil and Water Remediation-Sandia	21,992	24,773	22,097	-2,676	-10.8%
VL-LLNL-0013 / Solid Waste Stabilization and Disposition-Lawrence Livermore National Laboratory	1,416	7,589	4,609	-2,980	-39.3%
VL-LLNL-0030 / Soil and Water Remediation-Lawrence Livermore National Laboratory-Main Site	10,195	12,000	13,224	1,224	10.2%
Total, Defense Site Acceleration Completion, 2006 Accelerated Completions	1,207,401	1,231,911	1,245,171	13,260	1.1%

Detailed Program Justification

(dollars in thousands)

FY 2002	FY 2003	FY 2004

ID-OPS-0900-D / Pre-2004 Completions (life-cycle estimate $279,878K) **11,600** **4,338** **0**

This PBS includes five essential infrastructure line-items completed during FY 2002 and FY 2003 that support multiple EM projects across the Idaho National Engineering and Environmental Laboratory:

- 1) the Health Physics Instrumentation Laboratory project replaced a 50 year-old facility with many limitations and code violations. This new facility provides a controlled environment for calibration and testing of radionuclide measurement devices used across the Idaho National Engineering and Environmental Laboratory by various projects and programs (Former PBS was ID-OIM-109);
- 2) the Idaho National Engineering and Environmental Laboratory Electrical Distribution Upgrade project resolved and corrected code and standard deficiencies and corrected aged, deteriorated, and obsolete conditions of the electrical distribution system (Former PBS was ID-OIM-107);

- < 3) the Idaho National Engineering and Environmental Laboratory Road Rehabilitation project upgraded approximately 41 miles of existing roadways and approximately 93,000 square yards of parking areas, which will ensure safe staging, and transportation of all waste shipments (Former BPS was ID-OIM-108);
- < 4) the Idaho Chemical Processing Plant Security Facilities Consolidation project provided new security facilities, systems, and equipment to protect Special Nuclear Materials, Spent Fuel, and classified information at the Idaho Nuclear Technology and Engineering Center (Former PBS was ID-OIM-105); and
- < 5) the Electrical and Utility System Upgrade project upgraded the Idaho Nuclear Technology and Engineering Center by correcting high-risk safety, health, and environmental deficiencies (Former PBS was ID-OIM-106).

This activity also provides funds for fuel removal from the Materials Test Reactor and the Power Burst Facility into a safe, secure, and environmentally sound condition by December 2003. Activities include: completed 42 shipments (0.257 metric tonnes heavy metal) of spent nuclear fuel in wet storage in the Materials Test Reactor canal and plug storage holes number 1 and 2 at the Test Reactor Area to dry storage and completion of 28 shipments (0.562 metric tonnes heavy metal) of spent nuclear fuel in wet storage in the Power Burst Facility canal to dry storage. The transfer of this spent nuclear fuel to dry storage meets a commitment made to the State of Idaho and moves the Idaho National Engineering and Environmental Laboratory closer to having all spent nuclear fuel removed from wet storage by the Performance Management Plan date of 2012, eleven years earlier than the previous baseline date of 2023. (Former PBSs were ID-OIM-110-N and ID-OIM-112-N)

In FY 2004, using prior year funds, the following activities are planned to support the accelerated cleanup of the Idaho Operations Office.

- Complete the final eight Power Burst Facility canal spent nuclear fuel transfers to dry storage at the Idaho Nuclear Technology and Engineering Center. This empties the Power Burst Facility canal, allows for disposition of the basin water, and reduces the Idaho National Engineering and Environmental Laboratory spent nuclear fuel wet storage facilities to the Chemical Processing Plant-666. This allows for reduction in requirements associated with the nuclear facility status at the Power Burst Facility and reduces ongoing surveillance and maintenance costs.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	0	0	233	233	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed construction of the Health Physics Instrumentation Laboratory (FY 2002).
- Completed construction of the Idaho National Engineering and Environmental Laboratory Electrical Distribution Upgrade Project (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Completed construction of the Idaho National Engineering and Environmental Road Rehabilitation project (FY 2002).
- Completed construction and closeout of the Idaho Chemical Processing Plant Security Facilities Consolidation project (FY 2002).
- Completed construction of the Electrical Utility System Upgrade (FY 2002).
- Completed 42 shipments (0.257 metric tonnes heavy metal) of spent nuclear fuel in wet storage in the Materials Test Reactor canal and plug storage holes number 1 and 2 at the Test Reactor Area to dry storage at the Idaho Nuclear Technology and Engineering Center (FY 2002).
- Complete the transfer of spent nuclear fuel in wet storage in the Power Burst Facility canal to dry storage at the Idaho Nuclear Technology and Engineering Center (December 2003).

OR-0013A / Solid Waste Stabilization and Disposition-2006
(life-cycle estimate $323,969K) 57,218 52,560 61,506

This project reduces risk and storage cost by treating and disposing of over 20,000 m^3 of legacy low-level, mixed low-level, and industrial waste on the Oak Ridge Reservation. Legacy waste consists of waste that was generated in the past and stored, but still needs to be disposed. The Oak Ridge Performance Management Plan, the Letter of Intent, the Oak Ridge Accelerated Cleanup Plan Agreement, and the Site Treatment Plan commit to the disposal of legacy low-level waste by FY 2005 and the disposal of most of the mixed low-level waste by FY 2004. This project is a key element to the accelerated cleanup of the Oak Ridge Reservation. The legacy waste stored in Melton Valley and at the East Tennessee Technology Park is in the cleanup footprint and, consequently, its disposal is critical for accelerated cleanup. Legacy wastes in Y-12 are being dispositioned as part of the Accelerated Cleanup Plan agreement. Disposal will be in the Oak Ridge on-site disposal cell, the Nevada Test Site, and the Envirocare Facility in Utah, as appropriate and cost effective. Disposal of the legacy waste results in a significant mortgage reduction due to the elimination of storage costs. To date, over 49,000,000 kilograms of legacy mixed low-level waste, and all of the legacy Resource Conservation and Recovery Act hazardous wastes have been disposed. Only 750 m^3 of legacy industrial waste and 100 m^3 of polychlorinated biphenyl waste remain for disposal. Disposal of legacy low-level waste only began in 2001 when the Nevada Test Site disposal facility became available. Approximately 17,000 m^3 of low-level waste remain for disposal. (Former PBS was OR-151)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Operations Office.

- Legacy low-level waste, legacy mixed low-level waste, and Federal Facilities Compliance Agreement polychlorinated biphenyl waste will be disposed. The emphasis during FY 2004 will be on the legacy waste stored in Melton Valley and at the East Tennessee Technology Park to remove the legacy waste from the cleanup footprint.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	2,247	2,157	7,503	15,016	28,374	53%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Shipped for treatment/disposal 1,000,000 kg of mixed waste, listed in Table 3.4 of the Site Treatment Plan (FY 2002).
- The mixed low-level waste legacy inventory was reduced by approximately 2,247 m^3, and eight Resource Conservation and Recovery Act permitted storage areas were certified as closed (FY 2002).
- Ship for treatment/disposal balance of Site Treatment Plan Table 3.4 waste (September 2003).
- Ship for disposal to the Nevada Test Site the remaining 100 low-level monoliths (September 2003).

OR-0030 / Soil and Water Remediation-Melton Valley
(life-cycle estimate $332,146K) 22,711 46,291 60,119

Melton Valley is located just South of Oak Ridge National Laboratory and covers more than 1,000 acres. It was used between 1951 and 1986 for disposal of approximately 2 million curies of radioactive and mixed waste in burial grounds, unlined trenches, and deep hydrofracture injection wells.

The presence of creeks and shallow groundwater provides a ready transport mechanism of contaminants into White Oak Creek, which flows to the Clinch River, a drinking water source and recreational area. As a result, cleanup of Melton Valley is the top priority risk reduction action on the Oak Ridge Reservation and completion by 2006 is a primary goal of the Oak Ridge Performance Management Plan. The Melton Valley remediation project will focus on hydrologic isolation of 125 acres of former solid waste burial grounds, liquid waste seepage pits, and disposal trenches. Activities will also include in-situ stabilization and/or excavation of contaminated soil and sediment; retrieval of transuranic waste; plugging and abandonment of hydrofracture injection and monitoring wells; demolition of the Hydrofracture Facilities and other small facilities needing to be removed to execute remedial actions; shipment of spent nuclear fuel to the Idaho National Engineering and Environmental Laboratory; and stabilization of three inactive waste tanks.

Because waste will remain in Melton Valley, this area will continue to be a waste management area with access restrictions. The cleanup actions under this PBS scope will ensure that the waste is contained, on-site surface water quality improves to meet required standards, and off-site users of the Clinch River remain protected. Much of the progress made to date in Melton Valley has been completion of necessary pre-fieldwork activities such as completion of a Land Use Control Implementation Plan and design work. However, some field activities are already completed or underway. All spent nuclear fuel has been repackaged and shipments off-site will be completed in 2004. Plugging and abandonment of 115 hydrofracture injection and monitoring wells has begun and scheduled for completion in 2003. Capping of Solid Waste Storage Area 4, the first of three major

(dollars in thousands)

FY 2002	FY 2003	FY 2004

burial grounds to be capped, is underway and will be completed in 2004. Transuranic waste retrieval will be completed in 2005. Capping of the final two burial grounds and remediation of contaminated soils, along with all other work in this project, will be completed in 2006. (Former PBSs were OR-321 and OR-331)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Operations Office.

- Complete construction of the multi-layer cap on Solid Waste Storage Area 4.
- Continue with the cap construction on Solid Waste Storage Areas 5 and 6 the final two burial grounds to be capped.
- Complete disposition of the New Hydrofracture Facility demolition waste.
- Initiate retrieval of the buried transuranic waste from Solid Waste Storage Area 5 North, which must be removed by FY 2005 so that it can be treated at the Transuranic Waste Processing Facility and shipped to the Waste Isolation Pilot Plant as planned.
- Complete the shipments of spent nuclear fuel to the Idaho National Engineering and Environmental Laboratory.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Radioactive Facility Completions (Number of Facilities)	2	0	1	3	13	23%
Industrial Facility Completions (Number of Facilities)	1	0	0	2	2	100%
Remediation Complete (Number of Release Sites)	2	1	18	45	99	45%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed demolition of the Old Hydrofracture Facility (FY 2002).
- Disposed of roughly 15,000 cubic yards (90 percent) of Intermediate Holding Pond soil to eliminate a major source of cesium-137 contamination leaving the Oak Ridge Reservation. Removal of this contaminated soil was also necessary prior to Solid Waste Storage Area 4 cap placement (FY 2002).
- Completed the repackaging of spent nuclear fuel (FY 2002).
- Completed plugging and abandonment of all 167 non-hydrofracture monitoring wells in the Solid Waste Storage Area 4 burial ground to allow cap placement (FY 2002).
- Completed plugging and abandonment of 32 hydrofracture monitoring wells (for a total of 65 wells completed and 46 wells remaining (FY 2002).
- Completed a 33-acre borrow area development and haul road upgrades which will support all Melton Valley capping activities (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete plugging and abandonment of all remaining 46 hydrofracture wells (September 2003).
- Complete excavation of the Intermediate Holding Pond (September 2003).
- Complete capping of the Solid Waste Storage Area 4 (September 2004).
- Complete demolition of the New Hydrofracture Facility (September 2004).
- Complete shipments of spent nuclear fuel (September 2004).

OH-AB-0030 / Soil and Water Remediation-Ashtabula
(life-cycle estimate $157,057K) 16,000 16,000 15,970

The Ashtabula Soil and Water Remediation Project consists of remediation of 32 facilities, disposition of equipment, and remediation of affected land areas and groundwater. Completion will allow the Ohio Department of Health to release the site to the owner, RMI Titanium Company, for unrestricted use. Facility decommissioning will be by remediation and disposal of debris in licensed, off-site disposal facilities or facility demolishment to free-release levels. Contaminated soil will be shipped to a low-level waste disposal site for burial. Groundwater remediation will be accomplished through source removal to onsite release limits followed by natural attenuation. Risk assessment will be conducted to confirm that natural attenuation provides adequate protection of the groundwater.

The project end-state of the site will be unrestricted and will be reached by the end of FY 2006, or sooner. Monitoring, well sampling, and analysis activities will continue for a five year period. At the end of 2002, a total of 16 of the 32 facilities (about 80,000 square feet) have been demolished and the resulting debris shipped or prepared for shipment to licensed disposal facilities. By the end of the second quarter of FY 2003, all legacy waste will be disposed to licensed disposal sites. Approximately one-fourth of the contaminated soil has been remediated, that is 12,000 tons remediated out of 50,000 tons. In-situ treatment of contaminated groundwater has commenced. All equipment formerly used during production has been disposed. (Former PBSs were OH-AB-01 and OH-AB-02)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Ashtabula Site under the Ohio Field Office.

- Begin excavation and shipment of remaining estimated known scope (i.e., 38,000 tons) of contaminated soil to a licensed disposal site.
- Begin remediating remaining estimated known scope (4,273 cubic yards) of contaminated concrete in building floor slabs and foundations by excavating, sizing, packaging, and shipping the resulting waste to a permitted disposal site.
- Demonstrate efficiency of natural groundwater contamination attenuation.
- Ship off-site the to-date remainder of building remediation debris.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	2	94	0	104	104	100%
Radioactive Facility Completions (Number of Facilities)	8	2	0	17	25	68%
Industrial Facility Completions (Number of Facilities)	1	0	0	1	7	14%
Remediation Complete (Number of Release Sites)	0	0	0	0	3	0%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Demolished nine facilities for a total of 43,225 square feet or about 32 percent of the life-cycle total (FY 2002).
- Shipped 95 percent of remediation debris generated in FY 2001 and 2002 to disposal (FY 2002).
- Shipped 90 percent of the remaining containerized waste (FY 2002).
- Engineered and installed wastewater effluent flow augmentation system (FY 2002).
- Initiated contaminated groundwater remediation (FY 2002).
- Complete demolition of two (of the remaining 16) facilities, 20,000 square feet, about 15 percent of life-cycle total (September 2003).
- Complete disposal of 100 percent of building remediation debris generated in FY 2003 (March 2004).

OH-CL-0040 / Nuclear Facility D&D-West Jefferson
(life-cycle estimate $163,438K) 16,100 21,100 23,058

Completion of the West Jefferson site accelerated clean-up consists of four primary objectives: 1) decontamination and demolition of three large buildings: JN-1, High Energy Hot Cell Facility (20,200 square feet); JN-2, Critical Assembly Building (13,000 square feet), and JN-3, Reactor Building (10,000 square feet); 2) cleanup of related external areas (contaminated filter beds and buried utilities); 3) waste management activities (packaging, transportation, and disposal of transuranic waste, low-level waste and contaminated soils and debris); and 4) surveillance and maintenance (phased out as site hazards are reduced).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The end-state objective is to safely remediate Battelle facilities to levels of residual contamination allowing future use of the site without radiological restrictions by the end of FY 2006 or sooner, thereby releasing DOE from all future liability. All future use decisions will be made by the site owner, Battelle. Progress to date toward this end-state includes: completion of remote-handled transuranic waste packaging, completion of one (out of 21) transuranic waste shipments to Hanford for interim storage, decontamination of JN-3 in preparation for demolition without costly radiological controls, and decontamination/stabilization activities in JN-1 (44 percent complete). Overall, the West Jefferson site remediation is approximately 40 percent complete at the end of FY 2002. (Former PBSs were OH-CL-02-D and OH-CL-03-D)

In FY 2004, the following activities are planned to support the accelerated cleanup of West Jefferson under the Ohio Field Office.

- Accelerate demolition of buildings JN-2 and JN-3 as radiologically clean structures from FY 2005 to FY 2004. The overall strategy for decontamination and demolition of building JN-2 involves relocation of building occupants to alternate facilities and removal of materials and utilities from both internal and external surfaces followed by characterization, surface decontamination to less than regulatory limits, buried drain line removal, and, finally, demolition of the building and its foundation according to standard industrial practice.
- Complete decontamination of the Research Reactor Building, JN-3 (10,000 square feet).
- Dispose of 2,040 m^3 of remediation waste including building debris and soil at Envirocare (1/3 of total).

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	1	0%
Radioactive Facility Completions (Number of Facilities)	0	0	2	14	14	100%
Remediation Complete (Number of Release Sites)	0	0	0	1	2	50%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed packaging of transuranic waste in the High Energy Cell, JN-1, achieving over 95 percent volume reduction in the site's primary radiological hazard (FY 2002).
- Completed decontamination/stabilization of the High Energy Cell in building JN-1 (FY 2002).
- Finished removal of the Cask Sabotage Experimental Unit in Building JN-1 (FY 2002).
- Completed decontamination of JN-3 Reactor Building basement (FY 2002).
- Reduce site risk by completing all of the remaining 21 transuranic waste shipments to Hanford (May 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Reduce site risk by decontaminating/stabilizing the High Energy Cell, JN-1 (July 2003).
- Accelerate site closure by demolishing JN-3 building structure (May 2004).
- Accelerate site closure by demolishing JN-2 building structure (July 2004).

OH-FN-0013 / Solid Waste Stabilization and Disposition-Fernald (life-cycle estimate $1,557,567K) 207,941 236,802 203,365

The Solid Waste Stabilization and Disposition Project at Fernald includes the remediation and final disposition of all process-generated wastes from multiple sources, including high specific activity waste contained in Silos 1, 2, and 3, the Waste Pits, containerized low level waste, and mixed wastes. This project's scope includes characterization, treatment, packaging, transportation, and final disposition of the most radioactive and/or hazardous wastes on-site. The disposition of this waste represents the critical path to achieve closure of the Fernald site.

The final remediation of these waste streams will be implemented through facility design, and construction of needed treatment facilities; use of off-site treatment facilities; integrated systems testing; and operations; packaging and transportation of treated wastes and final disposal as required; and ultimately the safe turnover of facilities to be decontaminated and dismantled.

The future end-state will be the safe disposition of all process-generated low-level legacy wastes (by May 2003) to allow for decontamination and dismantlement of the building complexes, followed by soils remediation, and closure of the Fernald site (December 2006).

This project has made significant progress. The planned activities for FY 2004 are consistent with the Fernald's accelerated cleanup strategy presented in the site's Performance Management Plan. As of September 2002, a cumulative total of 2,253 railcars have been loaded with waste from the Waste Pits and shipped off-site. (This represents an approximate total of over 450,000 tons of Waste Pits material excavated, treated, and shipped off-site.) Almost 50 percent of this activity is complete, and approximately 3,406 railcars remain to be loaded and shipped by the end of FY 2005.

Additionally, 6.1 million cubic feet of low-level waste was shipped to the Nevada Test Site leaving approximately 460,000 cubic feet remaining for disposition to the Nevada Test Site. The Silos 1 and 2 treatment facility design is nearing completion, and construction has been initiated. The Silos Accelerated Waste Retrieval facility has completed design and initiated construction, including completion of the Radon Control System to reduce radon concentrations in the Silo's headspace and worker exposures. The Silo 3 treatment facility design is complete and construction is ongoing in the field. Remaining scope includes completing construction of the treatment facilities and retrieving, treating, packaging, and shipping the waste off-site. (Former PBSs were OH-FN-01, OH-FN-05, OH-FN-07, OH-FN-10, OH-FN-11, and OH-FN-12)

In FY 2004, the following activities are planned to support the accelerated cleanup at Fernald.

- Treat and ship off-site by rail 150,000 tons of waste pit material, which cumulatively represents approximately 80 percent of the total for this project.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Disposition the limited quantity of newly-generated mixed and low-level waste from ongoing activities.
- Complete construction on Silos 1 and 2 Accelerated Waste Retrieval Facility (this facility will transfer the contents of Silos 1 and 2 to tanks for transfer to the treatment facility.)
- Complete construction and initiate startup of Silos 1 and 2 Treatment Facility for FY 2005 operations start.
- Complete construction and startup of Silo 3 Retrieval Facility (including system operability, testing, readiness assessment, and start-operations authorization).

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	316	2,962	15	7,494	7,494	100%
Remediation Complete (Number of Release Sites)	0	0	0	2	4	50%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Excavated, treated, and shipped 136,929 tons of "waste pit" material off-site by rail for a cumulative total of approximately 50 percent completion (FY 2002).
- Dispositioned 17,137 m^3 of mixed and low-level legacy and remediation waste to multiple sources (79 percent complete) (FY 2002).
- Continued construction for Silos 1 and 2 Accelerated Waste Retrieval and Treatment Facilities (FY 2002).
- Completed construction of the Silos 1 and 2 Radon Control System to reduce radon concentrations in the Silos' headspace (FY 2002).
- Completed design of Silo 3 retrieval facility and initiated construction (FY 2002).
- Amend Operable Unit 4 Record of Decision to eliminate Silo 3 material treatment (April 2003).
- Dispose 7,075 m^3 mixed and low-level legacy and remediation waste to multiple sources, reducing risk and waste inventory and preparing for decontamination and decommissioning (September 2003).
- Remove all containerized waste from Plant 1 Pad (critical to decontamination and decommissioning schedule for 2006 closure (September 2003).
- Process and ship by rail 150,000 tons of waste pit material of the total 900,000 tons to a permitted commercial facility (September 2003).
- Identify alternate disposition for silo material at a commercial disposal facility (September 2003).
- Amend Operable Unit 4 Record of Decision to permit Silos 1 and 2 materials disposition at a commercial facility (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete construction of Silos 1 and 2 treatment facility that will stabilize the Silo material (June 2004).
- Complete construction of Silos 1, 2, and 3 retrieval facilities (September 2004).
- Process and ship by rail 150,000 tons of waste pit material of the total of 900,000 tons to a permitted commercial facility (September 2004).

OH-FN-0030 / Soil and Water Remediation-Fernald (life-cycle estimate $1,070,141K) 45,264 65,982 67,884

The Soil and Water Remediation Project includes the characterization, remediation, and certification of all environmental media (soil, below-grade debris, and water). This scope of work includes excavation, hauling, and final disposition of all contaminated soils and below-grade debris that exceed the "final remedial levels" for cleanup at Fernald. The contaminated soils, below-grade debris, and debris generated from decontamination and dismantlement activities will be placed in an On-Site Disposal Facility for final disposal. Soil and debris that exceed the On-Site Disposal Facility waste acceptance criteria will be transferred for disposition off-site. In addition, natural resource restoration activities are performed to return the site to its natural state following remediation. This project also contains the scope to confine and extract uranium from the Great Miami Aquifer, a sole source aquifer under the Fernald site, as well as the scope for management of storm water, operations of sewage treatment facilities, and groundwater monitoring. The completion of the scope within this project represents a significant portion of the critical activities required to close the Fernald site.

The future end-state of this project will be the final cleanup of environmental media at the Fernald site, including soil and below grade debris excavation, hauling, and disposal in the On-Site Disposal Facility by December 31, 2006. Once the soil and debris are placed in the On-Site Disposal Facility, the Facility will be closed and monitored, and the site will be certified to ensure site remediation levels have been achieved. Additionally, the groundwater infrastructure will remain in place for the completion of post-closure aquifer remediation.

As of September 2002, significant progress has been made within this project, 1,200,000 cubic yards, of the estimated total of 2,200,000 cubic yards, of soil and below grade debris have been excavated, and nearly 900,000 cubic yards have been placed in the five individual cells constructed in the On-Site Disposal Facility. This represents 35 percent complete for this activity, with over one million cubic yards remaining to be placed in the On-Site Disposal Facility. Nearly ten billion gallons of water have been pumped from the aquifer and treated, removing 4,343 pounds of uranium and completing approximately 60 percent of this activity. Over 52 percent of the site has been certified as clean, and natural restoration has begun in numerous locations. (Former PBSs were OH-FN-01, OH-FN-03, OH-FN-04, OH-FN-06, and OH-FN-12)

In FY 2004, the following activities are planned to support the accelerated cleanup at Fernald.

- Excavate approximately 410,000 cubic yards of contaminated soils and below grade debris from six former production areas and other areas.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue to receive waste for placement an the On-Site Disposal Facility, Cells 3, 4, and 5 totaling 350,000 cubic yards.
- Process approximately 2.4 billion gallons of wastewater/groundwater.
- Continue characterization, certification, natural resource restoration, groundwater monitoring, storm water management, and sewage treatment plant operations.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	0	0	0	2	0%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Continued excavation of contaminated soil and below-grade debris from former production areas and other areas, totaling 280,000 cubic yards (FY 2002).
- Placed 245,000 cubic yards of soil and debris in the On-Site Disposal Facility (FY 2002).
- Completed construction of the cap for Cell 1 out of seven planned cells (FY 2002).
- Place 184,000 cubic yards of material in the On-Site Disposal Facility to maintain 2006 closure schedule (September 2003).
- Excavate 213,000 cubic yards of soil and below-grade debris to reduce contamination levels (September 2003).
- Complete construction of the On-Site Disposal Facility Cell 2 cap (December 2003).
- Complete construction of the On-Site Disposal Facility Cell 6 liner to prepare cell for waste placement (September 2004).

OH-FN-0050 / Non-Nuclear Facility D&D-Fernald (life-cycle estimate $328,363K) 27,485 16,744 46,748

The Non-Nuclear Facilities Decontamination and Dismantlement Project is responsible for the decontamination and dismantlement of 30 complexes (over 200 above-grade structures) of Operable Unit 3 (former Production Area and related buildings and equipment); design/engineering/planning work needed to support decontamination and dismantlement; and management of debris resulting from decontamination and dismantlement. Debris management includes: containerization, off-site disposal of wastes unsuitable for disposal in the On-Site Disposal Facility, recycling and/or release of materials, delivery of debris to interim storage, and delivery of the On-Site Disposal Facility-bound debris to identified staging/queuing areas.

The end-state of facility decontamination and dismantlement is the removal and disposition of all former production-related buildings and support structures, leaving only trailers supporting post closure activities. To date, 16 out of 30 complexes have been completed. (Former PBSs were OH-FN-01, OH-FN-02, and OH-FN-12)

(dollars in thousands)

FY 2002	FY 2003	FY 2004

In FY 2004, the following activities are planned to support the accelerated cleanup at Fernald.

- Decontaminate and dismantle pipe bridges and miscellaneous structures.
- Complete decontamination and dismantlement of Plant 1 Complex Phase II (accelerated 25 months), Liquid Storage Complex Phase II (accelerated 25 months), Administration Complex (accelerated 22 months), and Pilot Plant Complex (accelerated 25 months).
- Decontamination and dismantlement of each former production complex includes most and/or all of the following: building preparation, asbestos abatement, acid brick removal, release cleaning, transite roofing and siding removal, structural steel dismantlement, debris size management, decontamination of equipment, and subcontractor demobilization.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Radioactive Facility Completions (Number of Facilities)	2	4	4	24	29	83%
Industrial Facility Completions (Number of Facilities)	0	0	1	1	1	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed decontamination and dismantlement of Phase 1 the Miscellaneous Structures. Phase I includes 23 structures, such as the Security Building and Industrial Relations Building. This is a portion of a two phase completion (FY 2002).
- Initiated decontamination and dismantlement of the Pilot Plant Complex (44,315 square feet), where workers developed operating prototypes for all Phases of Uranium Metal Production (FY 2002).
- Completed decontamination and dismantlement of the Plant 6 Complex (225,625 square feet), the largest of the former Uranium Processing plants and the Maintenance Building Complex (65,500 square feet) (FY 2002).
- Completed decontamination and dismantlement of subprojects such as the Health and Safety Building 53 (19,669 square feet), completed ahead of schedule as part of the Administration Complex, which will be totally completed in FY 2004 (FY 2002).
- Complete decontamination and dismantlement of Plant 2 (30,872 square feet), Plant 3 (21,391 square feet), and Plant 8 (74,022 square feet) Complexes, and the General Sump Complex (35,083 square feet) to allow for soil excavation (September 2003).
- Complete decontamination and dismantlement of the Liquid Storage Complex Phase II (31,000 square feet) to allow for soil and excavation (December 2003).
- Complete decontamination and dismantlement of the Laboratory Complex (76,000 square feet), the Pilot Plant Complex (44,315 square feet), and Plant 1 Phase II (178,000 square feet) to allow for soil excavation (March 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete decontamination and dismantlement of the Administration Complex (125,000 square feet) to maintain closure schedule (September 2004).

OH-MB-0013 / Solid Waste Stabilization and Disposition-Miamisburg (life-cycle estimate $190,531K) 22,294 17,592 18,359

Solid waste stabilization and disposition activities at the Miamisburg Closure Project involve the management of low-level waste, low-level mixed waste, transuranic waste, hazardous waste, and solid waste streams. This includes interim waste storage, shipment of waste to federal and commercial disposal facilities, and, in some cases, minor treatments. With the exception of transuranic waste, all legacy nuclear materials and chemical and radioactive waste streams have been dispositioned. The site operates six facilities and a rail staging area to manage waste streams which are dispositioned when generated. Transuranic waste is currently being shipped to the Savannah River Site pursuant to an agreement between the Department of Energy and the State of South Carolina. Three of ten scheduled shipments have been completed and all legacy transuranic waste is scheduled to be dispositioned by the end of FY 2003.

The end-state for this project is the disposition of all waste streams to approved disposal sites by the end of FY 2006. At the end of FY 2002, 43 percent (93,227 m^3) of the total estimated life-cycle volume for all waste streams have been shipped. After all waste streams have been dispositioned, the waste facilities will be demolished with exception of the rail spur that will be transferred to the local community for industrial reuse.

The Miamisburg Closure Project Performance Management Plan (August 2002) describes the strategic initiatives, key objectives, and milestones necessary to support the completion of all Environmental Management activities at the Miamisburg Closure Project by the end of 2006. The plan contains two objectives for accelerating waste disposition: 1) ship waste when generated and 2) reduce exposure to the workers and public. To achieve these objectives, the Miamisburg Closure Project has modified the rail spur to improve volume and efficiency in rail shipments and is combining contaminated building debris with contaminated soil, thereby shipping waste faster and cheaper. (Former PBSs were OH-MB-14, OH-MB-15, and OH-MB-17)

In FY 2004, the following activities are planned to support the accelerated cleanup of Miamisburg under the Ohio Field Office.

- Ship 9.14 m^3 of hazardous waste for off-site disposal, 6,196 m^3 of solid waste to the local landfill, and transfer 188 m^3 of mixed waste to commercial vendors.
- Ship for disposal 6,750 m^3 of remediation waste to the Nevada Test Site and 26,201 m^3 of remediation waste to Envirocare.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	0	0	0	3,947	3,947	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Transferred 28 m^3 (9 percent of 300 m^3 total) of transuranic waste to Savannah River Site (FY 2002).
- Shipped 2,686 m^3 of remediation low-level waste to Nevada Test Site and 22,006 m^3 of remediation low-level waste to Envirocare for disposal. This represents 18 percent of the sites's remaining 138,762 m^3 of radioactive remediation waste (FY 2002).
- Ship 272 m^3 of transuranic waste to Savannah River Site. This will complete the disposition of the site's legacy transuranic waste (September 2003).
- Complete shipment of 2,941 m^3 remediation low-level waste to the Nevada Test Site and 16,499 m^3 of remediation low-level waste to Envirocare. This represents 14 percent of the site's remaining 138,762 m^3 of radioactive remediation waste (September 2003).
- Complete shipment of 6,750 m^3 remediation low-level waste to the Nevada Test Site and 26,201 m^3 of remediation low-level waste to Envirocare. This represents 24 percent of the site's remaining 138,762 m^3 of radioactive remediation waste (September 2004).

OH-MB-0030 / Soil and Water Remediation-Miamisburg
(life-cycle estimate $156,937K) 14,869 16,365 18,968

This project resolves problems resulting from wastes released into the environment during the operation of the Mound Plant from 1940 through 1994. As a result of these past activities, the soil and groundwater are contaminated with radioactive and hazardous chemicals. The U.S. Environmental Protection Agency placed the site on the National Priority List in 1989 because of chemical contamination present in the site's groundwater and the site's proximity to a sole-source aquifer.

The end-state for this project is the completion of the remediation of all contaminated soil areas (Potential Release Sites), the completion of two groundwater treatment systems, and the completion of all associated Comprehensive Environmental Response, Compensation and Liability Act documentation required to close the site and effect transfer of the property to the local community by the end of FY 2006.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

At the end of FY 2002, 58 percent of the Potential Release Sites (104 of 178) remaining after FY 1996 have been completed. Of the remaining 74 Potential Release Sites, nine still need to be assessed and 65 require removal action. Groundwater remediation contaminant levels must be at or below maximum contaminant levels or to such a point where monitored natural attenuation can occur as a final remedy. To date, 256 million gallons of groundwater have been treated, removing more than four thousand pounds of organic solvents. Recovery of groundwater contaminants is now minimal and further treatment could soon be discontinued with only long-term monitoring of the groundwater required.

The Miamisburg Closure Project Performance Management Plan (August 2002) describes the strategic initiatives, key objectives, and milestones necessary to support the completion of all Environmental Management activities at the Miamisburg Closure Project by 2006. The plan contains one objective for accelerating soil remediation by the completion of three key potential release sites by August 2005. To achieve this objective, the Miamisburg Closure Project is reducing the duration of final remedial design through a parallel review cycle for key stakeholders and streamlining process requirements and operations. Of significant note, excavation of Potential Release Site 66, the Miamisburg Closure Project's largest on-site soil removal project, commenced in January 2003 and will be completed a year ahead of schedule (by August 2005). (Former PBSs were OH-MB-12, OH-MB-15, and OH-MB-17)

In FY 2004, the following activities are planned to support the accelerated cleanup of Miamisburg under the Ohio Field Office.

- Major emphasis will be to complete the soil excavation phase for Potential Release Site 66, which represents 36 percent of the total estimated soil remediation remaining.
- Complete remediation of two Potential Release Sites (68 and 267).
- Continue assessments and remediation of nine other Potential Release Sites.
- Continue to operate the air stripper and soil vapor extraction groundwater treatment systems in accordance with the Operable Unit 1 Record of Decision, if required. Otherwise, maintain groundwater monitoring at minimal cost.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	5	4	2	110	178	62%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed all field characterization and draft Engineering Evaluation/Cost Assessment documents for Potential Release Site 66 which is the site's largest soil remediation area (30,857 m^3) (FY 2002).
- Performed five Potential Release Site completions (276, 73, 274/275, 72, and 421) which represents 5 percent of the total soil remediation remaining (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Commence soil excavation of Potential Release Site 66 as part of the site closure acceleration (January 2003).
- Complete the soil excavation phase of Potential Release Site 66 and complete the total remediation of Potential Release Site's 68 and 267. These three Potential Release Sites represent 38 percent of the total soil remediation remaining (September 2004).

OH-MB-0040 / Nuclear Facility D&D-Miamisburg (life-cycle estimate $545,973K) 52,482 60,743 57,307

The Nuclear Facility D&D project involves the deactivation, decontamination, decommissioning , and demolition or transfer of all facilities and other structures located within the Miamisburg Closure Project. The Mound Plant supported the defense nuclear weapons and energy research programs until 1994 and, as a result of these past operations, many of the facilities are contaminated with radioactive and/or hazardous chemicals. There were 135 facilities/structures remaining on the site after FY 1996 - eight were nuclear facilities, eleven were radiological facilities, and the balance industrial facilities. Of the 135 facilities/structures 111 are to be demolished and 24 transferred to the Miamisburg Mound Community Improvement Corporation to support industrial reuse of the site.

At the end of FY 2002, 44 facilities have been demolished and 15 transferred or readied for transfer to the Miamisburg Mound Community Improvement Corporation, leaving 67 facilities still to be demolished and 9 to be transferred to the Miamisburg Mound Community Improvement Corporation. Of these 76 facilities, 19 are radiologically contaminated and most of the remaining 57 facilities have some industrial contamination, all of which require decontamination and decommissioning. One of the transition buildings (T) must undergo extensive decommissioning and decontamination before transition. The R and SW buildings, which are Nuclear Category 2 buildings, have significant radiological contamination that must be mitigated prior to demolition.

The end-state for this project will be the successful transition of 24 facilities to the Miamisburg Mound Community Improvement Corporation, the demolition of all remaining facilities and structures, the removal of all aboveground utilities, and the restoration of the associated grounds to a natural state by the end of FY 2006.

The Miamisburg Closure Project Performance Management Plan (August 2002) describes the strategic initiatives, key objectives, and milestones necessary to support the completion of all Environmental Management activities at the Miamisburg Closure Project by 2006. The plan contains two objectives for accelerating the decommissioning and decontamination of the facilities: 1) completing the demolition or decontamination of the six most highly radioactively contaminated buildings by June 2006, and 2) subcontracting more remediation activities. To achieve these objectives, the Miamisburg Closure Project has started early removal of high concentrations of "holdup" tritium which will allow an early shutdown of the Tritium Effluent Reduction Facility and reduce the risk to workers and the need for higher levels of personnel protective equipment. Presently, 88 percent of the source term inventory has been eliminated. Also, the current workforce has been augmented by awarding three subcontracts to demolish five radiological facilities. (Former PBSs were OH-MB-10, OH-MB-13, OH-MB-14, OH-MB-15, OH-MB-16, and OH-MB-17)

(dollars in thousands)

FY 2002	FY 2003	FY 2004

In FY 2004, the following activities are planned to support the accelerated cleanup of Miamisburg under the Ohio Field Office.

- Complete decommissioning or transition activities for ten facilities totaling approximately 200,000 square feet. Two of the ten facilities will be made ready for transfer to the Miamisburg Mound Community Improvement Corporation; the remaining eight will be demolished.
- Continue with assessment and deactivation work of the nuclear facilities (SW, R and T).
- Continue reducing the source term in the nuclear facilities to minimize risk and facilitate deactivation.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	8	0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	0	11	0%
Industrial Facility Completions (Number of Facilities)	22	3	10	72	116	62%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Demolished 13 facilities (67,716 square feet) and readied for transfer nine facilities (107,920 square feet) to the Miamisburg Mound Community Improvement Corporation for reuse (FY 2002).
- Introduced a streamlined work control process and a concentrated focus on tritium source term reduction for the Nuclear Facilities. The source term reduction accomplished was 476,500 curies out of a total of 542,500 curies of tritium. The remaining tritium source term will be removed in FY 2003 (FY 2002).
- Complete structural demolition of Building 38 (44,327 square feet). This facility was used to process plutonium and is one of the site's six most radiologically contaminated buildings (September 2003).
- Complete structural demolition of WD Building (28,200 square feet). This facility was used to treat radioactive waste and is one of the site's six most radiologically contaminated buildings (September 2004).
- Complete structural demolition of HH Building (15,276 square feet). This facility was used to separate radioisotopes and is one of the site's six most radiologically contaminated buildings (September 2004).

OH-OPS-0900-D / Pre-2004 Completions (life-cycle estimate $57,726K) 12,560 0 0

This project contains scope for one Ohio project which was completed prior to FY 2004, at the Fernald Closure Project (Former PBS OH-FN-08), and associated overhead from previous PBSs OH-FN-01 and OH-FN-12.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

After several decades of uranium metals production supporting the U.S. Defense Programs, millions of pounds of waste materials remained when the mission of Fernald changed from uranium production to environmental remediation. Several options were pursued to dispose of nuclear product and materials, including transferring them to other DOE facilities for programmatic use, sale of product with market value to the private sector, and reclassification (and disposal) of some of the materials as waste. The scope of work for the Fernald nuclear materials project (low enriched, normal, and depleted uranium) involved sampling and analysis, repackaging, consolidating, shipping and disposing. Efforts to sell or transfer product were initially successful in reducing the inventory. The DOE Oak Ridge Operations Office agreed to assume the stewardship and marketing role for Fernald's nuclear product inventory to facilitate site remediation. The Portsmouth Gaseous Diffusion Plant was chosen as the storage site and the transfer of product to Portsmouth ended in May 2002. The end-state for the nuclear materials project at Fernald, the disposition of nuclear materials to off-site storage and disposal facilities, was reached in FY 2002. (Former PBSs were OH-FN-08 and OH-FN-12)

- No funding requested in FY 2004.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed shipment of Fernald nuclear material off-site, thus reducing worker exposure and allowing acceleration of decontamination and dismantlement efforts to proceed (FY 2002).

PO-0900 / Pre-2004 Completions (life-cycle estimate $0K) . . . 2,000 0 0

The PBS scope originally envisioned on-site disposal of waste at Portsmouth consisted of a disposal cell with ancillary facilities to support operations. In FY 2003, the Administration eliminated this project to permit EM to accelerate other higher risk reduction activities. Life-cycle cost estimates are based on a timeframe of 1997 to the end of the program; life-cycle estimates for release sites include pre-1997 actuals.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	0	0	130	130	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- No accomplishments or milestones associated with this PBS

(dollars in thousands)

FY 2002	FY 2003	FY 2004

RF-0011 / NM Stabilization and Disposition (life-cycle estimate $457,901K) 27,372 18,807 600

The scope of this PBS is to put plutonium metals and oxides and other highly radioactive materials in containers and packages that reduce the radioactive risk to the public, the environment, and the co-located worker. It includes activities necessary for stabilizing and repackaging over 103,901 kilograms of plutonium bearing residues located in Buildings 707 and 371, stabilizing and packaging 9.8 metric tonnes of plutonium metals and oxides for long-term storage, and packaging 6.7 metric tonnes of uranium for disposition. Completion of these stabilization and packaging activities will allow the site to deactivate, decontaminate, and decommission the facilities where the materials are currently located, and reduce the safeguards and security activities necessary to properly protect these materials.

Since FY 2001, the site has been stabilizing and packaging plutonium metals and oxides in the Plutonium Stabilization and Packaging System located in Building 371. This system produces sealed stainless steel cans containing plutonium metals and oxides. These cans meet DOE Standard 3013 for the long-term (50+ years) storage of these materials. As of the end of FY 2002, the site had produced 984 cans out of a life-cycle total of 1,700 cans. Another 962 kilograms of low purity plutonium oxide will be packaged for disposal at the Waste Isolation Pilot Plant, instead of being processed as 200 cans through the Plutonium Stabilization and Packaging System. The site is also size reducing 163 weapons parts as part of the effort to complete removal of special nuclear material. Operation of the Plutonium Stabilization and Packaging System will be completed in FY 2003. (Former PBS was RF-00A)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Rocky Flats Environmental Technology Site.

- The site will complete the removal and shipment of all Category I and II quantities of special nuclear material, allowing for both the closure of the last remaining Material Access Area in Building 371 and the elimination of the Reduced Protected Area surrounding Building 371. Elimination of the Reduced Protected Area will improve the productivity of Building 371 decontamination and decommissioning workers by reducing the amount of time required for workers to enter and exit the building. The removal of all special nuclear material from Building 371 will allow the site to aggressively pursue the decontamination and decommissioning of all areas of Building 371 and to remain on schedule for a 2006 site closure date.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Plutonium Metal or Oxide Packaged for Long-Term Storage (Number of Containers)	922	716	0	1,700	1,700	100%
Plutonium or Uranium Residues Packaged for Disposition (kg/bulk)	15,994	0	0	103,901	103,901	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed the stabilization and repackaging of the last nearly 16,000 kg of plutonium bearing residues, completing the entire 103,901 kg residue stabilization project (FY 2002).
- Produced 922 DOE Standard 3013 compliant cans in the Plutonium Packaging and Stabilization System (FY 2002).
- Complete special nuclear material stabilization and packaging (June 2003).
- Eliminate reduced Protected Area; PBS Complete (February 2004).

RF-0013 / Solid Waste Stabilization and Disposition (life-cycle estimate $820,978K) 104,701 105,700 86,953

The scope of this PBS is to safely and efficiently stabilize all waste generated during demolition of site buildings or through the remediation of under building soils and to dispose of the material in an approved and licensed off-site facility. Waste types include, transuranic and transuranic mixed waste with an estimated life-cycle total of 12,355 m^3, low-level and low-level mixed waste with an estimated life-cycle total of 210,798 m^3, and sanitary (landfill) waste with an estimated life-cycle total of 16,300 shipments, as well as hazardous and medical waste. This PBS scope also includes activities for the operation, maintenance, safety controls, compliance, and stabilization/hazard reduction of facilities utilized for storage, characterization, preparation, and shipment of waste. The facilities include pads, tents, and eight buildings. Also included is site-wide support of procurement systems and standards and traffic and transportation services.

Low-level and low-level mixed waste will be disposed at both commercial and DOE facilities. Through FY 2002, 15,612 m^3 or 7 percent of the low-level and low-level mixed waste have been shipped for disposal. The transuranic and transuranic mixed waste will be disposed at the Waste Isolation Pilot Plant. Through FY 2002, 4,259 m^3 or 34 percent of the transuranic waste has been shipped for disposal. Sanitary waste will be disposed at off-site commercial landfill(s). Through FY 2002, 4,344 shipments or 27 percent of sanitary waste has been shipped for disposal. Hazardous waste will be treated and disposed at off-site commercial treatment, storage, and disposal facilities. Waste stabilization and disposition will continue into 2006. (Former PBS was RF-00F)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Rocky Flats Environmental Technology Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue disposal of legacy and newly generated waste at a rate to maintain the accelerated closure project.
- The combined quantity of low-level and low-level mixed waste planned for FY 2004 disposal is 53,882 m^3 or 35 percent greater than the FY 2003 quantity. The quantity of transuranic waste planned for FY 2004 disposal is 2,344 m^3 or 14 percent greater than FY 2003. The quantity of sanitary waste planned for FY 2004 disposal is 4,500 shipments or 50 percent greater than FY 2003.
- Support the transuranic waste program and complete the Mobile TRUPACT-II loading station. Begin stabilization and hazard removal in two transuranic waste buildings.
- Complete waste operations in three other buildings and on one pad. These facilities subsequently will be decommissioned under PBS RF-0041, Nuclear Facility Decontamination and Decommissioning - South Side Facility Closures.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	2,903	2,065	2,344	8,668	12,355	70%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	2,797	39,788	53,882	109,282	210,798	52%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Disposed of 2,797 m^3 of low-level and mixed low-level waste (FY 2002).
- Disposed of 2,903 m^3 of transuranic waste (FY 2002).
- Disposed of 2,062 shipments of sanitary waste (FY 2002).
- Building 440 transuranic waste loading facility became operational to support the transuranic waste program (FY 2002).
- Complete FY 2003 regulatory milestone for low-level and mixed low-level waste (September 2003).
- Complete FY 2004 regulatory milestone for low-level and mixed low-level waste (September 2004).

RF-0030 / Soil and Water Remediation (life-cycle estimate $2,124,861K) 140,983 204,609 224,990

The scope of this PBS is to complete the environmental characterization, remediation, and restoration of the Rocky Flats site in accordance with the Rocky Flats Cleanup Agreement, and to provide site-wide administrative and support services necessary to achieve site closure.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Site closure requires environmental characterization, remediation of contaminated soil and water, and restoration of the site as necessary. Remediation or disposition of all individual hazardous substance sites includes: 1) documentation of No Further Actions; 2) removal of pavement and building foundations; 3) conversion of ponds to a post-closure configuration; 4) wetlands mitigation; and 5) recontouring, regrading and revegetation, all of which must be accomplished to achieve the final site closure. Ongoing closure support activities include: 1) operation of groundwater wells and surface water monitoring systems until decontamination and decommissioning and restoration activities are complete; 2) operation of the ponds; 3) pollutant source controls including actinide migration evaluations; and 4) design, construction, and operation of groundwater containment and treatment systems. Environmental remediation and restoration of all individual hazardous substance sites must support the final comprehensive site remedy pursuant to an approved Corrective Action Decision/Remedial Action Decision and deletion of the Site from the National Priority List.

Site-wide support services provide the quality assurance, health, safety, environmental stewardship, nuclear safety, and training necessary to support site closure. Administrative support services provide the executive management and administration necessary to support the site closure, as well as a conditional target incentive fee.

As of November 2002, the site has dispositioned 177 of the 240 total identified individual hazardous substance sites (74 percent), either through approved No Further Actions or implemented Rocky Flats Cleanup Agreement accelerated actions. This activity will end in December 2006. (Former PBSs were RF-00G, RF-00H, and RF-00J)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Rocky Flats Environmental Technology Site.

- Complete an additional eight of the total planned soil and water remediation projects.
- Begin and substantially complete remediation of the 903 Lip Area and Americium Zone.
- Complete under building contamination remediation for Buildings 881, 883, and 887.
- Install an industrial area groundwater barrier.
- Complete construction of the Present Landfill cover; commence remediation of the Original Landfill.
- Continue characterization and remediation of the Original Process Waste Lines; continue characterization of the Buffer Zone and Industrial area.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	7	9	8	194	240	81%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed seven of the total planned soil and water remediation projects (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Completed specific remediation of the following areas: 1) the former Building 442 site; 2) former buildings 886 and 889 foundation area; 3) the Individual Hazardous Substance Site Group 600-1 area (Building 662 and 663 slab); 4) the former pesticide storage area near Building 559; 5) the Portal 1 waste process spill; and 6) the Building 123 Remediation Project (complete remediation of the former Building 123 site) (FY 2002).
- Completed the 400-10 area characterization (west of Building 664) (FY 2002).
- Submitted the Present Landfill Interim Measure/Interim Remedial Action for regulatory review (FY 2002).
- Completed mobilization for the 903 Pad Remediation Project (FY 2002).
- Complete eight environmental release sites (September 2004).

RF-0040 / Nuclear Facility D&D-North Side Facility Closures
(life-cycle estimate $1,881,300K) 245,069 202,990 198,794

The scope of this PBS is to decontaminate and decommission all facilities on the north side of the Rocky Flats site. This decontamination and decommissioning activity includes all facility closure activities, including demolition of four nuclear building complexes. The nuclear building complexes included in this PBS are: Building 371/374 Cluster, Building 707 Cluster, Building 776/777 Cluster, and Building 771/774 Cluster. The total square footage of the facilities included in this PBS is approximately one million square feet. The activities that will be performed include building stabilization/deactivation, decontamination, demolishment, and dismantlement. This PBS includes 6 Material Access Areas, 6 Nuclear Facilities, 22 Radioactive Facilities, and 141 Industrial Facilities. In addition to the decontamination and decommissioning activity, this PBS also provides technical support for the Rocky Flats Field Office, site utilities, and Government Furnished Services/Items.

Building stabilization 1) removes a building from operation, 2) places the building in a safe and stable condition that eliminates or mitigates hazards, and 3) ensures adequate protection to the workers and the environment. Building deactivation builds on stabilization by removing systems and equipment contaminated by Special Nuclear Material. Decommissioning completes the facility closure process by removing any remaining process systems and structures, packaging and preparing all wastes and property for disposal, decontaminating the structure, and demolishing the building. Upon completion of decommissioning, the building footprint is assigned to PBS RF-0030, Soil and Water Remediation, for any required remediation.

As of November 2002, the site has eliminated five Material Access Areas (83 percent), and completed removal of one Nuclear Facility (17 percent) and 68 Industrial Facilities (48 percent). In addition, 61 percent of the gloveboxes have been removed, 86 percent of the deactivation and 50 percent of the decommissioning work activities have been completed. This work is scheduled to continue through much of 2006. (Former PBSs were RF-00A, RF-00B, RF-00C, RF-00D, RF-00E, and RF-029)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Rocky Flats Environmental Technology Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue deactivation and decommissioning activities in the nuclear buildings on schedule to accomplish a PBS completion date of December 15, 2006.
- Complete the deactivation of Building 371, complete the demolition of one nuclear facility (Building 771), seven radioactive facilities and 40 industrial facilities, remove 150 gloveboxes, complete 291 decommissioning activities, and close the Building 371 Material Access Area.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Material Access Areas Eliminated (Number of Areas)	0	0	1	6	6	100%
Nuclear Facility Completions (Number of Facilities)	0	0	1	2	6	33%
Radioactive Facility Completions (Number of Facilities)	0	0	7	7	22	32%
Industrial Facility Completions (Number of Facilities)	34	4	40	112	141	79%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Removed and processed all liquids from Building 771 (FY 2002),
- Completed the deactivation of Buildings 707 and 776/777 (FY 2002).
- Accelerated deactivation and decommissioning activities in all the nuclear buildings by completing 93 work sets instead of the 53 scheduled (FY 2002).
- Completed 59 deactivation and 377 decommissioning activities instead of the 50 and 284 scheduled (FY 2002).
- Demolished 34 industrial facilities instead of the five scheduled (FY 2002).
- Complete deactivation and decommissioning of four facilities (September 2003).
- Close Building 371 Material Access Area (February 2004).
- Complete demolition of Building 771 (August 2004).
- Complete deactivation and decommissioning of 48 facilities and close Building 371 Material Access Area (September 2004).

RF-0041 / Nuclear Facility D&D-South Side Facility Closures (life-cycle estimate $890,896K) 95,890 95,423 118,314

The scope of this PBS is to decontaminate and decommission all facilities on the south side of the Rocky Flats site. There are 32 Radioactive Facilities and 176 Industrial Facilities included in this PBS with a total of about five million square feet of space and one Material Access Area. The activities that will be performed include building stabilization and decommissioning.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Building stabilization 1) removes a building from operation, 2) places the building in a safe and stable condition that eliminates or mitigates hazards, and 3) ensures adequate protection to the workers and the environment. Specific stabilization activities include: 1) removing hazardous and non-hazardous materials; 2) draining fluids from equipment; 3) abating or encapsulating asbestos; 4) dispositioning excess property; and 5) reducing building fire loading. Decommissioning activities include: 1) removing the building from site infrastructure; 2) packaging all wastes; 3) disposing of property and waste; 4) decontaminating the structure, and 5) demolishing the building. Demolition includes dismantlement of walls, roofs, foundations, and connecting structures (breezeways, tunnels, and overhead walkways). Subsurface concrete is removed three feet below the existing grade (unless the building Rocky Flats Cleanup Agreement decision document specifies otherwise).

Upon completion of decommissioning, the building footprint is assigned to PBS RF-0030, Soils and Water Remediation, for final below grade remediation and or closeout.

As of November 2002, the site has eliminated one Material Access Area (100 percent) and completed removal of 83 Industrial Facilities (47 percent). The scope of this PBS is expected to be completed in 2006. (Former PBS was RF-00E)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Rocky Flats Environmental Technology Site.

- Complete hazards removal and stabilization in several facilities in preparation for decommissioning in FY 2004 and demolition in FY 2005.
- Demolish fourteen smaller structures including a radio tower, water supply tank, some security systems, and several storage tanks.
- Consolidate and/or move on-site personnel into off-site facilities to vacate facilities scheduled for hazard removal and stabilization.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Material Access Areas Eliminated (Number of Areas)	0	0	0	1	1	100%
Radioactive Facility Completions (Number of Facilities)	0	0	7	7	32	22%
Industrial Facility Completions (Number of Facilities)	18	2	0	85	176	48%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Demolished eighteen industrial facilities (five planned), including demolition of Buildings 886, 442, 111, 333, 850, 888, 280, 125, 560 Cooling Tower plus other smaller buildings and structures (FY 2002).
- Reduced the Protected Area and the fencing, guard stations, and towers were removed (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Relocated most DOE and several hundred contractor staff off-site so that more buildings could be demolished and Building 460 could be converted to a waste storage facility (FY 2002).

SR-0011A / NM Stabilization and Disposition-2006 (life-cycle estimate $122,438K) 32,165 3,133 211

At the end of the Cold War, the nuclear materials complex at the Savannah River Site contained a large inventory of nuclear materials in various forms and stored in many locations (raw materials, in-process, finished products, in vaults, reactor basins, etc.) in several facilities. Many of these nuclear materials were never intended to stay in their existing form and location when the national security mission ceased and the materials dispositioned mission began. These materials disposition activities began with the issuance of the Defense Nuclear Facilities Safety Board Recommendation 94-1 to stabilize "at-risk" nuclear materials which might pose a significant risk to the safety of the workers, the public, and/or the environment. The Defense Nuclear Facilities Safety Board Recommendation 2000-1 to amplify the concern and the current Savannah River Site Program Performance Management Plan is intended to accelerate removal of the risks posed by these materials.

This PBS scope provides construction funding for two projects to modify several facilities so that they can operate safely through their remaining life-cycle and so that they can stabilize and package plutonium materials for safe interim storage. The Canyon Exhaust Upgrade project is complete and the FB-Line Packaging and Stabilization project is being accelerated to effect completion by FY 2004. Operation of these facilities is covered in PBS SR-011B, Nuclear Material Stabilization and Disposition-2012.

Construction of the FB-Line Packaging and Stabilization project began in October 2001. Construction is scheduled to be complete and operations to begin in April 2003. The commitment in the department's Implementation Plan for the Defense Nuclear Facilities Safety Board Recommendation 2000-1 is to complete these stabilization activities by December 2005. Construction of the Canyon Exhaust Upgrade project began March 1996. Phase One, completed in mid-1997, rerouted the FB-Line exhaust and F-Canyon recycle vessel vent exhaust to the sand filter. Phase Two, completed in late 1998, replaced F- and H-Area diesel fuel tanks to conform to state and federal regulations for diesel fuel storage. Physical construction of Phase Three, the final phase, is complete. Final project close-out awaits official completion of Critical Decision 4 which is expected in FY 2003. (Former PBSs were SR-NM03, SR-NM04, and SR-NM05)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- FB-Line (02-D-420) - Complete system startup testing, complete system turnover, add additional racks in 235-F and close project.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Canyon Exhaust (92-D-140) - Complete startup testing and turnover of the remaining H-Area Canyon Exhaust Fan. Close out project in FY 2003 (FY 2002).
- FB-Line (02-D-420) - Complete design and construction activities, begin startup system testing, and begin system turnover to operations (Critical Decision-4 for packaging metals) (FY 2002).
- Submit Critical Decision 4a (start of operations) request for FB Line P and S Outer Can Welder (April 2003).
- Submit Critical Decision 4b (start of operations) request for FB Line P and S Furnace (October 2003).

SR-0900 / Pre-2004 Completions (life-cycle estimate $195,846K) 8,519 0 0

This PBS incorporates those infrastructure line-item projects completed prior to FY 2004. Line-item projects completed prior to FY 2002 include Plant Wide Fire Protection, Plant Maintenance, Domestic Water, Site Road Infrastructure, and High Level Drain Lines.

The PBS also incorporates five infrastructure line-item projects, which were completed during FY 2002 supporting the environmental cleanup mission across the Savannah River Site:

- < The Chlorofluorocarbon/Heating, Ventilation and Air Conditioning Chiller Retrofit project provided for the replacement or retrofit of refrigeration chillers using ozone-depleting chlorofluorocarbons and hydrochlorofluorocarbon-22 to ensure compliance with the Environmental Protection Agency stratospheric ozone protection amendment of the Clean Air Act at the Savannah River Site.
- < The Regulatory Monitoring and Bioassay Laboratory project provided a new facility for the Environmental Monitoring and Health Physics Technology departments of the Environmental, Safety, Health and Quality Assurance Division at the Savannah River Site and replaced a 50 year-old obsolete facility. The new facility provides full compliance with Occupational Safety and Health Administration, radiation protection requirements, industrial hygiene and environmental protection requirements as detailed in Federal and state regulations and DOE Orders.
- < The Decontamination of Laboratory Facilities 772-F and 773-A project decontaminated areas of the service floor of 772-F, and decontaminated and replaced the roof of 773-A. Approximately 15,000 square feet of the area in Building 772-F was decontaminated. The project also replaced parts of the 773-A roof equipment to preclude any additional contamination from occurring due to leaking exhaust components.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

< The Tank Farm Support Services F-Area project replaced all of the support service lines to Tanks 25-28, 33-34, and 44-47, as well as to the 242-16F evaporator, in F-Area Tank Farm. The existing underground service piping systems was abandoned in place and was not removed in order to minimize cost, radiological waste generation, and personal radiation exposure.

(Former PBSs were SR-DO01, SR-HL11, SR-IN01, SR-IN02, SR-IN03, SR-IN04, SR-IN05, SR-IN06, SR-IN07, SR-IN08, SR-IN09, SR-IN10, SR-IN11, SR-IN13, SR-IN14, SR-IN15, SR-IN16, SR-IN17, SR-IN18, and SR-IN19)

- No funding requested in FY 2004.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed construction and closeout of the Chlorofluorocarbon/Heating, Ventilation and Air Conditioning Chiller Retrofit project (FY 2002).
- Completed closeout of Regulatory Monitoring and Bioassay Laboratory project (FY 2002).
- Completed construction and closeout of the Decontamination of Laboratory Facilities 772-F and 773-A project (FY 2002).
- Completed construction and closeout of the Tank Farm Support Services F-Area project (FY 2002).

VL-FAO-0900 / Pre-2004 Completions (life-cycle estimate $232,667K) 8,100 0 0

This PBS contains projects that were completed/transferred out of Albuquerque prior to FY 2004: Los Alamos National Laboratory Waste Management - Newly Generated Waste; Pantex Waste Operations; Sandia National Laboratories Waste Management; Uranium Mill Tailings Remedial Action Surface Project; Maxey Flats Field Management Project; Monticello Projects; and Uranium Mill Tailings Remedial Action Groundwater. No budget authority is required in FY 2004 and beyond. Funds are still in this account for potential settlement of an Uranium Mill Tailings Remedial Action Surface Project contract lawsuit.

- No funding requested in FY 2004.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	0	0	0	1,319	1,319	100%
Remediation Complete (Number of Release Sites)	0	0	0	155	155	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- No accomplishments or milestones associated with this PBS

VL-KCP-0030 / Soil and Water Remediation-Kansas City Plant (life-cycle estimate $223,968K) 2,475 2,370 2,095

The Kansas City Plant environmental restoration project evaluates potential contamination from hazardous wastes that were released from the 1940's to the 1980's, and cleans up areas found to be a threat to human health/environment. Sites with limited risks will be managed through institutional controls. Storm sewers will be relined and grouted to reduce infiltration of polychlorinated biphenyl/solvent contamination. Contaminated groundwater will be treated prior to discharge into the sanitary sewer system. Projects necessary to complete environmental restoration are scheduled for completion by the end of FY 2006 under the accelerated cleanup plans. Kansas City has completed 40 of 41 release sites. The 95th Terrace is the final release site.

The end-state will be reached when the 95th Terrace project is complete and polychlorinated biphenyl/solvent concentrations in storm sewers are within regulated limits. At that point all remaining monitoring and treatment activities may be transferred to the site landlord. Pump and treat activities for contaminated groundwater and maintenance of institutional controls will continue beyond project completion. (Former PBS was AL-007)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Kansas City Plant.

- Complete the 95th Terrace Corrective Measure Implementation Workplan, which must be approved by the regulator prior to implementing the final remedy for the final release site at Kansas City.
- Continue groundwater treatment and monitoring and related reporting to the regulator.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-Cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	0	0	40	41	98%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed Outfall 002 cleaning/grouting to reduce solvent infiltration (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Completed lining of Storm Sewer 003 to reduce solvent infiltration (FY 2002).
- Completed phytoremediation technology project (FY 2002).
- Continue groundwater treatment (September 2003).
- Complete 95th Terrace Corrective Measures Study (July 2004).
- Complete 95th Terrace Project Corrective Measures Implementation Work Plan (September 2004).

VL-SN-0030 / Soil and Water Remediation-Sandia National Laboratory (life-cycle estimate $372,365K) 21,992 24,773 22,097

The Sandia National Laboratories Environmental Restoration Project mission is to complete all necessary corrective actions at environmental restoration release sites in the most expeditious and cost-effective manner while minimizing worker, public health, and environmental risks, addressing public concerns, and complying with all Federal, State, and local laws. The end-state for this PBS is when all solid waste management units and areas of concern are remediated or remediation systems are constructed and operational, and waste disposed of, or when the site is placed under institutional controls and long-term monitoring in accordance with State and Federal requirements. In particular, the Chemical Waste Landfill, Mixed Waste Landfill, and the Corrective Action Management Unit disposal cell, will be placed under long-term institutional control with fencing and signage and will be monitored for at least 30 years, per the Resource Conservation and Recovery Act requirements. Remediation systems operation and maintenance, long-term environmental monitoring of cleaned up areas, and institutional control may be conducted by the site landlord. Sites approved by the New Mexico Environment Department for No Further Action under the appropriate future-land-use category will be released, for applicable reuse under current environmental regulations.

Of the 268 sites investigated at the Sandia National Laboratory, New Mexico, remediation and/or closure of 12 sites was completed prior to FY 2002 and is accounted under PBS VL-FAO-0900, Pre-2004 Completions. In addition, regulatory closure and removal from the permit has been completed at 137 sites. Of the remaining 131 sites, 23 sites have been characterized and, if required, remediated and are in various stages of the regulatory approval process. Another five sites, including two septic systems, are active and will remain on the operating permit until deactivation, which is not expected to occur during the projected life-cycle of the Environmental Restoration Project. The remaining 103 sites are subject to accelerated closure as outlined in the Performance Management Plan. Of these 103 sites, 81 are Drains and Septic Systems which are undergoing characterization according to an agreement with the New Mexico Environment Department. The remaining 22 sites include two major landfill projects currently undergoing a Corrective Measures Study process, one of which has been excavated with backfilling operations scheduled for completion in FY 2003. Remaining work includes remediation, regulatory documentation, and site closure. Under the Accelerated Site Closure Plan for Sandia National Laboratory, the remediation scope in the PBS will be completed in FY 2006. (Former PBS was AL-018)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Sandia National Laboratory.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete Landfill Excavation Voluntary Corrective Measure Fieldwork at the Chemical Waste Landfill.
- Complete Corrective Action Management Unit operations. Completing the Chemical Waste Landfill fieldwork and Corrective Action Management Unit operations are major milestones for completing the Sandia National Laboratory Environmental Restoration Project by September 30, 2006.
- Complete installation, sampling, and evaluation of data for final vapor wells for the Drains and Septic Systems.
- Complete Voluntary Corrective Measure field implementation at two Solid Waste Management Units.
- Submit 20 Solid Waste Management Unit Assessment Reports to the New Mexico Environment Department for the Drains and Septic Systems to obtain regulatory closure.
- Complete vapor-well studies at applicable septic system areas. This will end characterization and will allow these critical-path activities to move to regulatory closure.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	0	0	0	8	8	100%
Radioactive Facility Completions (Number of Facilities)	0	0	0	1	1	100%
Remediation Complete (Number of Release Sites)	1	1	3	253	256	99%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Submitted Mixed Waste Landfill Corrective Measures Study Plan to the New Mexico Environment Department (FY 2002).
- Started backfill of the Chemical Waste Landfill excavation (FY 2002).
- Started waste treatment at the Corrective Action Management Unit (FY 2002).
- Initiated characterization of the Drains and Septic Systems (FY 2002).
- Complete soil treatment at the Corrective Action Management Unit (February 2003).
- Complete installation of Drains and Septic Systems Vapor Wells (June 2003).
- Complete Radioactive Waste Landfill Remediation (August 2003).
- Complete backfill operations at Classified Waste Landfill (September 2003).
- Complete backfill operations for the Chemical Waste Landfill (October 2003).
- Complete disposal cell cover at Corrective Action Management Unit (April 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete waste disposition at Classified Waste Landfill (September 2004).

VL-LLNL-0013 / Solid Waste Stabilization and Disposition-Lawrence Livermore National Laboratory (life-cycle estimate $102,244K) 1,416 7,589 4,609

The Solid Waste Stabilization and Disposition PBS scope involves the disposition of the remaining inventory of legacy waste from Lawrence Livermore National Laboratory. This PBS scope includes the characterization, packaging, treatment if needed, and safe removal of legacy waste from the Lawrence Livermore National Laboratory. Waste types include low-level waste, mixed low-level waste, combined low-level waste, (a mixture of California State regulated hazardous with low-level waste), transuranic waste, and mixed transuranic waste. Activities in this project ensure all wastes are managed safely and in compliance with Federal, State, and local regulations, DOE Orders, and the Lawrence Livermore National Laboratory policies and procedures.

At the end-state of this project, DOE will have characterized and shipped legacy transuranic waste and mixed transuranic waste to the Waste Isolation Pilot Plant; legacy mixed low-level waste to DOE sites and/or commercial entities for treatment and disposal; and legacy low-level waste to the Nevada Test Site and/or commercial disposal sites. This scope is to be accelerated as described in the Performance Management Plan's (August 2002) strategic initiative number two. This shifts the cleanup strategy from risk management to risk reduction by focusing resources on the packaging and disposition of all legacy waste by the end of FY 2006. The Lawrence Livermore National Laboratory Decontamination and Waste Treatment Facility will continue to be used for the treatment, storage, and disposal of legacy waste. (Former PBS OK-021)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Lawrence Livermore National Laboratory under the Oakland Office.

- Assaying of legacy low-level waste and mixed low-level waste for disposal to the Nevada Test Site and commercial disposal companies, as appropriate.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal to WIPP (m^3)	0	88	0	88	88	100%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	26	375	650	1,734	2,759	63%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Prepared authorization basis documents required to deploy mobile characterization units for characterization of transuranic waste prior to shipment off-site (FY 2002).
- Deploy mobile characterization units in close coordination with the Carlsbad Field Office, begin readiness reviews and initiate characterization work (FY 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Waste acceptance criteria prepared for treatment of mixed low-level waste at the Toxic Substance Control Act incinerator at Oak Ridge, Tennessee and low-level waste disposal at the Nevada Test Site (FY 2003).
- Complete characterization of the legacy transuranic waste and begin shipping to the Waste Isolation Pilot Plant (FY 2004).

VL-LLNL-0030 / Soil and Water Remediation Lawrence Livermore National Laboratory Main Site (life-cycle estimate $138,905K) 10,195 12,000 13,224

Past operations at the Lawrence Livermore National Laboratory Main Site, which involved the handling and storage of hazardous materials, resulted in the release and subsequent migration of contaminants into the soil and groundwater. The major contaminants are volatile organic compounds, primarily trichloroethylene.

The Lawrence Livermore National Laboratory Main Site restoration project consists of activities associated with existing contamination from past operations, controlling contaminated groundwater migration, and effectively remediating soil and groundwater where contaminants exceed regulatory limits to protect human health, the environment, and beneficial uses of natural resources by conducting cost-effective, science-based, state-of-the-art environmental restoration. This PBS scope has one operable unit and 120 release sites of which 104 have been completed to date.

The approved remedial actions required by the Record of Decision and identified in the Performance Management Plan (August 2002) strategic initiatives will be implemented by the end of FY 2006. Acceleration of these remedial actions will reduce the risks, overall liability, and mortgage at the Livermore Site associated with thirty-nine (39) distinct groundwater plumes contaminated with volatile organic compounds, nitrate, tritium, and/or metals. Activities in the scope of the project are consistent with the Performance Management Plan and focus on the build-out of the required remediation system scheduled be complete in FY 2006, to accomplish risk reduction associated with groundwater contamination and complete the EM mission. The proposed end-state is that the Livermore Site remediation systems be phased into long-term operation and maintenance, and that the associated environmental monitoring be transferred to the National Nuclear Security Administration. The project has completed build-out of twenty-seven (27) treatment systems with fifteen (15) additional remedial actions planned in the outyears (until FY 2006). Remediation will be complete when cleanup standards are achieved. (Former PBS was OK-001)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Lawrence Livermore National Laboratory under the Oakland Office.

- The cleanup project will continue to perform the annual surveillance and maintenance for operating 30 treatment systems at multiple on-site locations.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Three new treatment systems will be constructed, installed, and operated in FY 2004 to address groundwater contamination. The three new portable systems will be located at the Helipad Source Area, in the perched zone at the Building 518 Treatment Facility Area, and at the southern portion of the East Traffic Circle Source Area. These systems support the accelerated cleanup strategy by using a prioritized, risk-based approach (off-site plume capture and cleanup, prevention of further off-site plume migration, distal interior plume capture and cleanup, and source control to mitigate risk to on-site workers and to prevent further releases to groundwater) to achieve build-out of the regulatory-required remediation network by the end of FY 2006.
- Continue site-wide regulatory reporting and monitoring.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	2	1	0	105	120	88%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Continued operation of existing treatment facilities designed to remediate contamination in groundwater and/or soil vapor, reducing any associated risk and preventing off-site plume migration. Constructed and operated two new portable treatment units (FY 2002).
- Expanded wellfields through the installation of new extraction and/or monitor wells to optimize and expedite cleanup efforts (FY 2002).
- Construct, install, and operate a portable treatment unit on-site in the northeastern portion of the Treatment Facility C Area to prevent off-site plume migration (September 2003).
- Construct, install, and operate a portable treatment unit on-site in the northern portion of the Treatment Facility G Area to prevent off-site plume migration (September 2003).
- Construct, install, and operate a portable treatment unit on-site at the Eastern Landing Material Source Area to isolate and remediate the contaminated vadose zone and reduce contaminant concentrations in the source area (September 2003).
- Construct, install, and operate a portable treatment unit on-site at the Helipad Source Area to isolate and remediate the contaminated vadose zone and reduce contaminant concentrations in the source area (September 2004).
- Construct, install, and operate a portable treatment unit in the Building 518 Treatment Facility Area perched zone to remediate shallow source of volatile organic compounds and prevent additional impacts to underlying groundwater (September 2004).
- Construct, install, and operate a portable treatment unit in the southern portion of the East Traffic Circle Source Area to reduce contaminant concentrations in the source area and prevent plume migration and dispersion (September 2004).

	(dollars in thousands)		
	FY 2002	FY 2003	FY 2004
Total, Defense Site Acceleration Completion, 2006 Accelerated Completions	**1,207,401**	**1,231,911**	**1,245,171**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
ID-OPS-0900-D / Pre-2004 Completions	
■ Decrease reflects completion of the final eight Power Burst Facility canal spent nuclear fuel transfers to dry storage.	-4,338
OR-0013A / Solid Waste Stabilization and Disposition-2006	
■ The waste management costs increase in FY 2004 as more of the low-level waste located at the East Tennessee Technology Plant and Melton Valley is disposed in direct support of the accelerated cleanup plan. This waste is currently stored in the footprint of planned remediation activities and more than triples the amount dispositioned in FY 2003. Disposition of low-level waste at Y -12 is also increased to meet the Accelerated Cleanup Plan agreement commitment to dispose of all Oak Ridge Reservation low-level waste by FY 2005.	8,946
OR-0030 / Soil and Water Remediation-Melton Valley	
■ Closure of Melton Valley continues in FY 2004 as work at the Hydrofracture facility slows down. Alternatively, activities associated with the hydrologic isolation, soils and sediments, transuranic waste trenches and tanks, in-situ vitrification of trenches 5 and 7 and remedial action, transuranic waste and spent nuclear fuels projects increase in order to meet the Melton Valley closure date of FY 2006.	13,828
OH-AB-0030 / Soil and Water Remediation-Ashtabula	
■ No significant change.	-30
OH-CL-0040 / Nuclear Facility D&D-West Jefferson	
■ The increase in funding between FY 2003 and FY 2004 relates to the award of the fixed-price contract for the accelerated demolition of buildings JN-2 and JN-3. The incremental FY 2004 funding also allows parallel efforts to proceed in the JN-1 hot cell facility on an accelerated schedule including: removing utilities and systems, and reducing radiological conditions to levels consistent with simplified dismantlement.	1,958
OH-FN-0013 / Solid Waste Stabilization and Disposition-Fernald	
■ The FY 2004 reduced funding level results from major Silos subcontracts being awarded in FY 2002 and FY 2003 as well as the disposition of legacy wastes being completed in FY 2003.	-33,437

	FY 2004 vs. FY 2003 ($000)
OH-FN-0030 / Soil and Water Remediation-Fernald	
■ The increase in FY 2004 is attributed to the significant increase in the quantities of soils and below-grade debris being excavated and placed in the On-Site Disposal Facility to maintain the 2006 closure schedule.	1,902
OH-FN-0050 / Non-Nuclear Facility D&D-Fernald	
■ The increase in FY 2004 from FY 2003 is due to parallel work activities in multiple locations requiring additional equipment and manpower to meet the accelerated closure date of 2006.	30,004
OH-MB-0013 / Solid Waste Stabilization and Disposition-Miamisburg	
■ The increase is to accommodate a greater volume of waste that will be generated from the excavation of Potential Release Site 66.	767
OH-MB-0030 / Soil and Water Remediation-Miamisburg	
■ The increase is primarily the significant work scope associated with the soil excavation for Potential Release Site 66.	2,603
OH-MB-0040 / Nuclear Facility D&D-Miamisburg	
■ The decrease reflects completing deactivation activities in FY 2003 for the majority of the industrial buildings associated in the Special Metals Plutonium Processing/Test Fire Valley areas of the site and a concentrated effort to complete all deactivation activities in FY 2003 for the nuclear facilities associated with the Main Hill area.	-3,436
RF-0011 / NM Stabilization and Disposition	
■ This significant reduction in funding is the product of all special nuclear material being packaged and shipped off-site by the fall of 2003 and the remainder of the work scope in this PBS to be completed in early 2004.	-18,207
RF-0013 / Solid Waste Stabilization and Disposition	
■ The successful shipping of radioactive materials and wastes from the site results in reduced volumes of waste to be managed. Accordingly, funds required to manage also reduces. The reduction in funding for this PBS reflects the lower funding requirements from the successful shipment of wastes to off-site locations.	-18,747
RF-0030 / Soil and Water Remediation	
■ The funding increase in this PBS reflects the progress and evolution of the project and the reallocation of funding to this priority as higher priority activities (nuclear material stabilization and solid waste stabilization) are completed.	20,381
RF-0040 / Nuclear Facility D&D-North Side Facility Closures	
■ No significant change.	-4,196

	FY 2004 vs. FY 2003 ($000)
RF-0041 / Nuclear Facility D&D-South Side Facility Closures	
■ After the nuclear materials and wastes are removed from buildings, significant progress can then be made on actually removing buildings. Several South Side Facilities are ready for decontamination and decommissioning, thereby requiring increased funding.	22,891
SR-0011A / NM Stabilization and Disposition-2006	
■ Decrease in funding due to completion of the FB-Line Packaging and Stabilization project.	-2,922
VL-KCP-0030 / Soil and Water Remediation-Kansas City Plant	
■ No significant change.	-275
VL-SN-0030 / Soil and Water Remediation-Sandia National Laboratory	
■ Reduced funding represents decrease in activity/scope requirements as closure (2006) nears..	-2,676
VL-LLNL-0013 / Solid Waste Stabilization and Disposition-Lawrence Livermore National Laboratory	
■ The decrease is mainly attributable to anticipated completion of the majority of activities associated with transuranic waste mobile characterization operations and shipment.	-2,980
VL-LLNL-0030 / Soil and Water Remediation-Lawrence Livermore National Laboratory-Main Site	
■ Increase in funding to maintain the accelerated strategy focusing on completing the build-out of all remediation system to reduce overall risk associated with groundwater contamination and expedite site closure by the end of FY 2006.	1,224
Total Funding Change, Defense Site Acceleration Completion, 2006 Accelerated Completions	**13,260**

2012 Accelerated Completions

Mission Supporting Goals and Measures

The Defense Site Acceleration, 2012 Accelerated Completions account provides funding for completing cleanup and closing down facilities contaminated as a result of nuclear weapons production. This account includes all geographic sites with an Accelerated Cleanup Plan closure date of 2007 through 2012 (e.g., Pantex, Lawrence Livermore National Laboratory-Site 300). In addition, this account provides funding for EM sites where overall site cleanup will not be completed by 2012 but cleanup projects within a site (e.g., spent fuel removal, all transuranic waste shipped off-site) will be completed by 2012.

Subprogram Goals

Accelerating risk reduction and cleanup is the central focus of the EM program. Funding in this account is focused on completing risk reduction and cleanup activities at sites with a closure date of 2012 or earlier. Additionally, this account supports cleanup projects at other sites where overall cleanup will not be completed by 2012 but specific projects will be completed by 2012.

Since submittal of the FY 2003 Congressional Budget, EM has made substantial progress towards defining the accelerating risk reduction and cleanup strategies at each of its sites. Letters of Intent have been signed with many of our state and Environmental Protection Agency regulatory authorities. These Letters of Intent lay the foundation to move forward with the implementation of EM's accelerated risk reduction and cleanup strategies. Using the Letters of Intent as a basis, Performance Management Plans were then developed. These Performance Management Plans articulate the strategies, key milestones, and commitments that demonstrate sites are accelerating risk reduction and cleanup. From the Performance Management Plans, resource loaded project baselines will be developed that EM will use to manage and track risk reduction and real cleanup progress at its sites. These baselines are expected to be completed during FY 2003.

Performance Indicators

Performance measurement is integral to the success of the EM program in achieving its accelerated risk reduction and cleanup goals. Performance measurement of the EM program consists of "corporate" measures that provide a comprehensive programmatic perspective on progress as well as site and project-specific milestones which are used to demonstrate whether a project and site are on track to achieve its agreed to expectations and schedule. In October 2002, the Assistant Secretary for Environmental Management established a new set of corporate performance measures for the program. The corporate measures are quantitative and focus on the completion of sites, the interim steps necessary to complete sites, and the accomplishment of risk-reduction activities. These new measures, which are under strict EM Headquarters change control, will enable EM to comprehensively track progress against its accelerated risk reduction and closure objectives. In addition, these corporate measures are tracked in the context of the life-cycle total necessary to complete each site as well as the EM program as a whole.

Environmental Management is currently in the process of establishing site resource-loaded baselines which are expected to be completed during FY 2003. The establishment of these site baselines will enable the program to more meaningfully monitor and evaluate actual performance against the new accelerated baselines. Environmental Management believes significant strides have been made in its ability to monitor and demonstrate performance through the establishment of new corporate measures, implementation of a strict configuration management system, and the expected completion of new accelerated site baselines in FY 2003. Environmental Management acknowledges that the program needs to continue to improve upon the progress made to date to further develop project management techniques and associated cost and schedule performance measures. This will enable EM to demonstrate more clearly performance in meeting the program goals of accelerated risk reduction and site cleanup, thereby reducing life-cycle costs.

The EM corporate performance measures are:

- Number of Containers of Plutonium Metal/Oxide Stabilized and Packaged for Long-Term Storage;
- Kilograms of Enriched Uranium Stabilized and Packaged for Long-Term Storage;
- Number of Material Access Areas Eliminated;
- Kilograms Bulk of Plutonium Residues Stabilized, Packaged and Disposed;
- Cubic Meters of Transuranic Waste Stabilized, Packaged and Disposed;
- Kilograms of Depleted Uranium Packaged and Disposed;
- Metric Tons of Spent Nuclear Fuel Packaged for Disposal;
- Canisters of High-Level Waste Processed, Packaged, and Disposed;
- Gallons of Liquid Waste Stabilized and Disposed;
- Number of Liquid Waste Tanks Closed;
- Number of EM Geographic Sites Eliminated;
- Cubic Meters of Low-Level/Low-Level Mixed Waste Packaged and Disposed;
- Number of Nuclear Buildings/Facilities Deactivated, Decommissioned, Demolished, or Transferred;
- Number of Radioactive Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred;
- Number of Industrial Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred; and
- Number of Release Sites Evaluated, Remediated, and Closed Out.

The corporate measures will be complemented by project-specific measures consistent with the site Performance Management Plans and Letters of Intent. Those project-specific measures are typically milestones that signify that project and site progress is sufficient to meet established schedules. Detailed performance measure and milestone information can be found in the site details that follow this program overview.

Annual Performance Results and Targets [a]

	FY 2002 Actuals	FY 2003 Estimate	FY 2004 Estimate
2012 Accelerated Completions			
Plutonium Metal or Oxide Packaged for Long-Term Storage - Number of Containers	100	2,120	923
Enriched Uranium Packaged for Long-Term Storage - Number of Containers	0	293	1,310
Plutonium or Uranium Residues Packaged for Disposition - (kg/bulk)	1,820	934	254
Depleted and Other Uranium Packaged for Disposition (metric tonnes)	0	1,815	0
Liquid Waste Tanks Closed - Number of Tanks	0	1	1
Spent Nuclear Fuel Packaged for Final Disposition - MTHM	511	857	632
Transuranic Waste Shipped for Disposal at WIPP (m^3)	2,065	1,053	8,681
Low-Level and Mixed Low-Level Waste Disposed (m^3)	6,295	6,893	9,789
Nuclear Facility Completions - Number of Facilities	1	2	0
Radioactive Facility Completions - Number of Facilities	1	1	5
Industrial Facility Completions - Number of Facilities	6	4	4
Remediation Complete - Number of Release Sites	28	79	44

Funding by Site

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Idaho Operations Office					
Idaho National Engineering and Environmental Laboratory	446,950	514,324	524,392	10,068	2.0%
Oak Ridge Operations Office					
East Tennessee Technology Park	2,918	4,585	5,665	1,080	23.6%
Oak Ridge Reservation	89,622	80,816	54,329	-26,487	-32.8%
Total, Oak Ridge Operations Office	92,540	85,401	59,994	-25,407	-29.8%
Richland Operations Office					
Hanford Site	465,334	469,664	500,456	30,792	6.6%
Office of River Protection					
River Protection	665,000	690,000	690,000	0	0.0%
Savannah River Operations Office					
Savannah River Site	345,563	367,592	367,388	-204	-0.1%

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

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Various Locations					
Los Alamos National Laboratory	24,943	30,036	43,338	13,302	44.3%
Pantex Plant	13,547	15,618	21,433	5,815	37.2%
Nevada Test Site	10,910	8,133	10,363	2,230	27.4%
Lawrence Livermore National Laboratory	9,345	10,800	10,485	-315	-2.9%
Oakland Operations Office	1,157	520	465	-55	-10.6%
Total, Various Locations	59,902	65,107	86,084	20,977	32.2%
Total, Defense Site Acceleration Completion, 2012 Accelerated Completions	2,075,289	2,192,088	2,228,314	36,226	1.7%

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
ID-INEEL-0011 / NM Stabilization and Disposition	2,000	1,500	300	-1,200	-80.0%
ID-INEEL-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	48,157	53,522	43,726	-9,796	-18.3%
ID-INEEL-0013 / Solid Waste Stabilization and Disposition	177,138	189,479	224,341	34,862	18.4%
ID-INEEL-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	107,146	140,281	133,566	-6,715	-4.8%
ID-INEEL-0030B / Soil and Water Remediation-2012	106,843	116,852	106,720	-10,132	-8.7%
ID-INEEL-0040B / Nuclear Facility D&D-2012	1,887	4,226	6,680	2,454	58.1%
ID-INEEL-0050B/ Non-Nuclear Facility D&D-2012	3,779	8,464	9,059	595	7.0%
OR-0013B / Solid Waste Stabilization and Disposition-2012	89,622	76,574	50,556	-26,018	-34.0%
OR-0031 / Soil and Water Remediation-Offsites	0	4,242	3,773	-469	-11.1%
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	2,918	4,585	5,665	1,080	23.6%
RL-0011 / NM Stabilization and Disposition-PFP	109,161	124,870	145,360	20,490	16.4%
RL-0012 / SNF Stabilization and Disposition	208,940	184,574	172,457	-12,117	-6.6%
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	147,233	160,220	182,639	22,419	14.0%
ORP-0060 / Major Construction-Waste Treatment Plant	665,000	690,000	690,000	0	0.0%
SR-0011B / NM Stabilization and Disposition-2012	345,563	367,592	367,388	-204	-0.1%
VL-LANL-0013 / Solid Waste Stabilization and Disposition-Los Alamos National Legacy	24,943	30,036	43,338	13,302	44.3%

	(dollars in thousands)				
	FY 2002	FY 2003	FY 2004	$ Change	% Change
VL-PX-0030 / Soil and Water Remediation-Pantex	13,447	15,518	18,692	3,174	20.5%
VL-PX-0040 / Nuclear Facility D&D-Pantex	100	100	2,741	2,641	2641.0%
VL-NV-0013 / Solid Waste Stabilization and Disposition-Nevada Test Site	10,910	8,133	10,363	2,230	27.4%
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition-Oakland Sites-2012 (Defense)	1,157	520	465	-55	-10.6%
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory-Site 300	9,345	10,800	10,485	-315	-2.9%
Total, Defense Site Acceleration Completion, 2012 Accelerated Completions	2,075,289	2,192,088	2,228,314	36,226	1.7%

Detailed Program Justification

	(dollars in thousands)		
	FY 2002	FY 2003	FY 2004
ID-INEEL-0011 / NM Stabilization and Disposition (life-cycle estimate $10,800K)	**2,000**	**1,500**	**300**

The Idaho National Engineering and Environmental Laboratory currently stores special nuclear material at several storage locations. To strengthen safeguards and security and decrease the national security risk associated with special nuclear material, this PBS will consolidate approximately 2,771 kgs (total uranium) of special nuclear material stored at the Idaho National Engineering and Environmental Laboratory as of the beginning of FY 2003 at off-site location(s) with controlled storage. Such consolidation will not only provide better security for these materials, but will also reduce the annual maintenance and security costs by eliminating unnecessary special nuclear material storage locations.

The consolidation of special nuclear material is the primary activity to fulfilling the objectives of DOE's strategy to transfer all EM-managed special nuclear material off-site. The end-state for this PBS is to have all of the special nuclear material transferred to an off-site location(s) or dispositioned to other program sponsors by the end of FY 2009, in accordance with the Performance Management Plan for accelerating cleanup of the Idaho National Engineering and Environmental Laboratory. To date, about 231 kgs (total uranium) of legacy special nuclear material have been transferred off-site. (Former PBS was ID-SNF-103)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete the repackaging and transfer of denitrator product from the Idaho National Engineering and Environmental Laboratory to Savannah River Site and Nuclear Fuel Services. This transfer dispositions approximately 1,772 kgs, or 64 percent by weight, of the special nuclear material at the Idaho National Engineering and Environmental Laboratory to out-of-state locations (National Nuclear Security Administration is the primary fund sponsor for this activity).
- Complete transfer of 27 kgs of special nuclear material received from Rocky Flats and the University of Washington from Chemical Processing Plant-651 to the Savannah River Site or other off-site location.
- Complete transfer of 19 kgs Rover/PARKA special nuclear material off-site to Oak Ridge (Y-12).
- A total of 1,819 kgs total uranium will be shipped off-site in FY 2004; this furthers the complex-wide consolidation plans and decreases the national security risks. The remaining 825 kgs of special nuclear material will be dispositioned by the end of FY 2009.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Enriched Uranium Packaged for Long-Term Storage (Number of Containers)	0	68	698	766	1,106	69%
Material Access Areas Eliminated (Number of Areas)	0	0	0	0	1	0%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Shipped 5 kgs (total uranium) of Rover/PARKA unirradiated special nuclear material from the Irradiated Fuel Storage Facility to Oak Ridge (Y-12) (FY 2002).
- Ship 127 kgs (total uranium) of special nuclear material, including 14 kgs of Rover/PARKA unirradiated material and 115 kgs of special nuclear material received from the Los Alamos National Laboratory to Oak Ridge (Y-12) (September 2003).
- Complete the transfer of all denitrator product to the Savannah River Site or Nuclear Fuel Services (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

ID-INEEL-0012B-D / SNF Stabilization and Disposition-2012
(Defense) (life-cycle estimate $1,040,305K) 48,157 53,522 43,726

The Idaho National Engineering and Environmental Laboratory currently stores approximately 235 metric tonnes heavy metal (legacy and non-legacy) spent nuclear fuel in four locations. Of this, approximately 26 metric tonnes heavy metal (legacy and non-legacy) spent nuclear fuel is stored in water-filled pools. In accordance with the Performance Management Plan, this project accelerates the consolidation of legacy spent nuclear fuel to a single site area at the Idaho Nuclear Technology and Engineering Center by the end of FY 2005. The project also accelerates the transfer of legacy spent nuclear fuel from wet to dry storage located at the Idaho Nuclear Technology and Engineering Center by the end of FY 2012, 11 years ahead of the previous baseline date of 2023, thereby reducing the environmental risks and the costs of interim storage. Additionally, this project will disposition the Fermi blanket legacy spent nuclear fuel, which is a sodium-bonded fuel for which a treatment and disposal has not been finalized. (Non-legacy spent nuclear fuel is covered in PBS HQ-SNF-0012X, SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository.)

This activity also manages the National Spent Nuclear Fuel Program that is responsible for working with the Office of Civilian Radioactive Waste Management to ensure future inclusion of the complex-wide DOE-owned spent nuclear fuel in the monitored geologic repository and meet the repository packaging requirements. This program is the primary interface that provides the packaging requirements necessary for disposal of DOE-owned spent nuclear fuel at the monitored geologic repository. This critical advance work facilitates final legacy spent nuclear fuel acceptability and packaging for road-ready storage until transported to monitored geologic repository. The final packaging of stored spent nuclear fuel into road-ready configuration for shipment to the monitored geologic repository will occur by the end of CY 2034 and will be addressed in PBS HQ-SNF-0012X, SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository.

To date, legacy spent nuclear fuel from the Advanced Reactivity Measurement Facility/Coupled Fast Reactivity Measurement Facility canal and from Test Area North-607 have been moved to dry storage. (Former PBSs were ID-SNF-101, ID-SNF-102, and ID-SNF-103)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

- Move two West Valley casks to the Idaho Nuclear Technology and Engineering Center Dry Storage Pad.
- Move all six casks from the Test Area North-791 storage pad to Chemical Processing Plant-2707 Dry Cask Storage Pad. This completes the consolidation of all EM-owned spent nuclear fuel at several Idaho National Engineering and Environmental Laboratory locations to the Idaho Nuclear Technology and Engineering Center.
- Complete and document all studies, analyses, and engineering evaluations necessary for inclusion of DOE spent nuclear fuel in the monitored geologic repository license application, scheduled for submission by DOE to the Nuclear Regulatory Commission in December 2004.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Commence final removal of Idaho National Engineering and Environmental Laboratory spent nuclear fuel from wet storage.
- Begin the transfer of EBR-II spent nuclear fuel from Chemical Processing Plant-666 to the Argonne National Laboratory-West for treatment and disposition as an interim step to removing all EM spent nuclear fuel from wet storage.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed removal of 25 fuel units (3.708 metric tonnes heavy metal) of Loss-of-Fluid Test/commercial and epoxied spent nuclear fuel from the Test Area North-607 wet storage basin and the Test Area North Hot Shop, and placed them into three casks in storage on the Test Area North-791 dry cask storage pad (FY 2002).
- Complete analysis of DOE spent nuclear fuel to support inclusion in the monitored geologic repository license application (September 2004).
- Complete consolidation of all EM-owned spent nuclear fuel at the Idaho National Engineering and Environmental Laboratory to the Idaho Nuclear Technology and Engineering Center (September 2004).

ID-INEEL-0013 / Solid Waste Stabilization and Disposition
(life-cycle estimate $1,930,202K) 177,138 189,479 224,341

This waste treatment and disposal activity PBS scope accelerates the disposition of stored transuranic waste (approximately 65,000 m^3), low-level waste, Resource Conservation and Recovery Act hazardous waste, and mixed low-level waste backlog; closes on-site low-level waste disposal facilities at the Radioactive Waste Management Complex; and accelerates the consolidation of waste management facilities in order to reduce fixed operating costs. The various wastes that are covered in this project were generated during active operations at the Idaho National Engineering and Environmental Laboratory and other DOE sites. Solid low-level waste, which has no backlog, will continue to be disposed of on-site at the Radioactive Waste Management Complex, and sent off-site to other DOE disposal facilities. Backlog liquid low-level waste will continue to be sent off-site to commercial treatment, using a contract currently in place to manage this waste stream. The mixed low-level waste backlog of 2,250 m^3 will be treated and disposed of by the end of FY 2004, primarily using commercial off-site treatment and disposal facilities. This allows the closure of all unnecessary storage and treatment facilities at the Waste Operations Complex by the end of FY 2004.

Resource Conservation and Recovery Act hazardous waste has no backlog, and is treated and disposed of through a contract with a commercial vendor. The transuranic waste is comprised of both contact-handled and remote-handled waste, 3,100 m^3 of contact-handled transuranic waste was processed on the Idaho National Engineering and Environmental Laboratory in aging non-production facilities, while the remainder of the contact-handled transuranic waste (approximately 62,000 m^3) will be processed in the privatized Advanced Mixed Waste Treatment Project, scheduled to begin processing transuranic waste in 2003. Remote-handled transuranic waste (approximately 360 m^3) will be managed separately from the Advanced Mixed Waste Treatment Project, which cannot process remote-handled waste. The remote-handled transuranic waste is expected to be shipped to the Waste Isolation Pilot Plant for disposal by the end of FY 2011. Newly-generated Resource Conservation and Recovery Act hazardous and radioactive low-level waste and mixed low-level waste will be dispositioned as it is generated, and a new generator accountability system will be implemented at the Idaho National Engineering and Environmental Laboratory to make site generators responsible for funding the management of their own wastes, beginning in FY 2004. These activities help reduce both short-term operational costs and longer-term surveillance and maintenance costs to the program by accelerating waste shipments off-site and closing unnecessary facilities. More importantly, this accelerated work will eliminate hazards to workers and the stakeholders and reduce risk to the environment.

These waste management activities will be complete when all backlogged contact-handled transuranic waste is disposed by the end of 2012, six years ahead of DOE's commitment to the State of Idaho under the Settlement Agreement. In addition, all backlogged liquid low-level waste will be dispositioned by the end of FY 2004 and legacy mixed low-level waste will be disposed off-site by September 2004. The on-site disposal cell at Radioactive Waste Management Complex will cease operations for contact-handled low-level waste disposal in 2008 and the remote-handled low-level waste in 2009.

In 2002, 2,050 m^3 of transuranic waste were shipped to the Waste Isolation Pilot Plant, 3,995 m^3 of low-level waste were disposed, and 350 m^3 of the containerized mixed low-level waste backlog were sent off-site for treatment and/or disposal. Additionally, the Advanced Mixed Waste Treatment Project has completed all environmental permitting activities, the treatment facility construction was completed, and preparations for waste retrieval operations are progressing. (Former PBSs were ID-WM-101, ID-WM-102, ID-WM-103, ID-WM-104, ID-WM-105, ID-WM-106, and ID-WM-108)

This PBS also funds a subproject that was appropriated as a privatization project in the past, but is not proposed as a separate control in FY 2004 or in future fiscal year's. The appropriations for project number 97-PVT-2, Advanced Mixed Waste Treatment, were $52,000,000 in FY 2002, and $105,000,000 in FY 2003. The request for FY 2004 is $114,226,000 and is included in the total PBS request of $224,341,000. For more information on this subproject, a Subproject Detail description is included in the Appendix.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Commence the Advanced Mixed Waste Treatment Project treatment facility operations to accelerate contact-handled transuranic waste shipments to the Waste Isolation Pilot Plant.
- Complete construction of remote-handled transuranic waste non-intrusive characterization systems and CNS 10-160B cask transportation capabilities to support early remote-handled transuranic waste shipments to the Waste Isolation Pilot Plant.
- Complete pre-conceptual design work for modular glovebox treatment system to support Critical Decision 0 for remote-handled transuranic waste intrusive characterization/repackaging systems and remote-handled 72B cask transportation capabilities.
- Complete treatment of the low-level waste liquid backlog by the end of FY 2004; complete segregation and treatment of 207 m^3 of mixed low-level waste high radiological debris; and complete treatment and disposal of the 2,250 m^3 of containerized backlog mixed low-level waste.
- Complete Resource Conservation and Recovery Act closure of two mixed low-level waste storage facilities and one treatment facility at the Waste Reduction Operations Complex, which completes the closure of all mixed low-level waste treatment and storage facilities no longer necessary for ongoing operations.
- These activities support treating and disposing the containerized mixed low-level waste backlog and liquid low-level waste by the end 2004, the contact-handled transuranic waste by the end of 2012, and remote-handled transuranic waste by 2011 completing work at the Waste Reduction Operations Complex by the end of 2004, and closing the Radioactive Waste Management Complex low-level waste disposal facility by 2009.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	2,050	623	7,615	11,104	64,251	17%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	4,345	4,450	8,540	35,475	77,430	46%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Shipped 2,050 m^3 of transuranic waste to the Waste Isolation Pilot Plant (FY 2002); disposed 3,995 m^3 of low-level waste (FY 2002); and treated and/or disposed 350 m^3 of containerized mixed low-level waste backlog (FY 2002).
- Completed Settlement Agreement Milestone for shipment of 3,100 m^3 of transuranic waste to the Waste Isolation Pilot Plant which includes the shipment of 2,050 m^3 (October 2002).
- Completed construction of the Advanced Mixed Waste Treatment Project treatment facility (December 2002) and commence waste retrieval operations (March 2003).
- Complete Resource Conservation and Recovery Act closure of the Waste Experimental Reduction Facility (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Move all mixed waste out of the Waste Reduction Operations Complex (September 2003).
- Commence treatment operations of the Advanced Mixed Waste Treatment Facility to accelerate contact-handled transuranic waste shipments to the Waste Isolation Pilot Plant (April 2004).
- Complete remote-handled-transuranic waste technical strategy document, mission need documents, and conceptual design supporting treatment and off-site shipment of remote-handled transuranic waste (September 2004).
- Complete Resource Conservation and Recovery Act closure of the Waste Reduction Operations Complex (September 2004).

ID-INEEL-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012 (life-cycle estimate $2,337,167K) 107,146 140,281 133,566

This PBS addresses the highest priority Idaho National Engineering and Environmental Laboratory environmental risk. By 2012, this PBS scope includes the removal and treatment of the liquid wastes stored over the Snake River Plain aquifer, transports the treated waste out of the State of Idaho, and closes the tank farm.

Specifically, this PBS completes the accelerated treatment and disposal of approximately 900,000 gallons of liquid sodium-bearing radioactive waste associated with spent nuclear fuel reprocessing currently stored in 11 underground tanks, and completes Resource Conservation and Recovery Act closure of the tank farm tanks by 2012, four years earlier than the previous baseline. The major investment and primary focus will be design, construction and operation of a facility that will retrieve and treat the sodium bearing liquid and solid tank wastes for disposal at a national waste repository. The type of facility constructed to treat the sodium-bearing waste will be determined by a rigorous technology selection process that will select the most effective and cost-efficient technology from a field of four. The final selection of the primary technology will be completed by FY 2005 so that construction of the treatment facility can start in FY 2006. Other activities include cleaning and Resource Conservation and Recovery Act closure of the tank farm tanks and associated equipment. This also includes Resource Conservation and Recovery Act closure of major high-level waste program facilities that complete their mission prior to 2012 (e.g., waste calciner). Other activities include the preliminary design of solid high-level waste calcine retrieval and treatment facilities to ultimately dispose of 4,400 m^3 of high-level waste calcine at the monitored geologic repository with minimal treatment; Resource Conservation and Recovery Act Part B permit application for the system to be used to make high-level waste calcine road-ready; treatment and disposal, by 2012, of 68 m^3 of high-efficiency particulate air filters and 207 m^3 of radioactive debris mixed low-level waste; and continuation of Idaho Nuclear Technology and Engineering Center infrastructure and utility system operations to support the Idaho Nuclear Technology and Engineering Center cleanup mission. Footprint reduction activities and other minor construction are also part of the scope.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

By 2012, liquid sodium bearing waste will be treated and disposed, selection of the calcine treatment method (i.e., initial design of the calcine retrieval and treatment system) will be complete and legacy high-efficiency particulate air filters and mixed low-level waste debris treatment will be complete. To date, six sodium bearing waste tanks have been emptied, the liquid waste inventory has been reduced to the lowest level since 1958 and two tanks have been cleaned in preparation for Resource Conservation and Recovery Act closure. (Former PBSs were ID-HLW-101, ID-HLW-102, ID-HLW-103, ID-HLW-105, ID-OIM-102, ID-OIM-117, and ID-PED)

This PBS includes $1,126,000, the final year of funding, for the INTEC Cathodic Protection System Expansion project, line-item 02-D-402. This PBS also funds the Sodium Bearing Waste Treatment Facility project that will establish the capability to treat sodium bearing high-level waste into a final waste form. The FY 2004 request is $20,500,000 for design activities. For more information on this project, refer to the Project Engineering and Design data sheet (04-D-414) at the end of this section.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

- Progress towards the accelerated tank farm closure by 2012 continues with the Resource Conservation and Recovery Act closure of the second of five pillar and panel vaulted tanks and the cleaning and sampling of two additional tanks.
- The FY 2004 activities supporting treatment of the sodium bearing waste are to:
  - < Complete conceptual design activities for the sodium bearing waste treatment project, initiate preliminary design on primary technology, and complete Sodium-Bearing Waste, Treatment Facility Critical Decision 1 documentation; and
  - < Complete characterization of remaining liquids and solids in the 11 underground tanks.
- To complete legacy waste disposition of high efficiency particulate air filters and debris wastes by 2012, the following FY 2004 treatment and disposition will be accomplished:
  - < Treat 21.7 m^3 of debris waste for disposal; and
  - < Treat 4.5 m^3 spent high efficiency particulate air filters for disposal.
- To support issuance of a Record of Decision on calcine treatment by 2009, and the commencement of retrieval and shipment of packaged calcine by 2020 (ID-INEEL-0014C), a Resource Conservation and Recovery Act Part B permit application for bin set storage of calcine will be completed. Also, technology development and other planning for non-intrusive calcine characterization will commence.
- Complete the Idaho Nuclear Technology and Engineering Center Cathodic Protection System expansion project to ensure continued protection of the Idaho Nuclear Technology and Engineering Center waste and vaulted spent fuel storage systems.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Liquid Waste in Inventory Eliminated (thousands of gallons)	0	0	0	0	900	0%
Liquid Waste Tanks Closed (Number of Tanks)	0	1	1	2	11	18%
Transuranic Waste Shipped for Disposal at WIPP (m^3)	0	0	0	0	1,130	0%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed emptying the five pillar and panel vaulted tanks, 18 months ahead of schedule (FY 2002).
- Completed initial cleaning and sampling of the first pillar and panel vaulted tank (FY 2002).
- Processed 644 m^3 of liquid waste through the High-Level Liquid Waste Evaporator (FY 2002).
- Initiate conceptual design activities on four alternative technologies for the sodium-bearing waste treatment facility project (September 2003). Complete conceptual design and initiate preliminary design on the primary technology (September 2004).
- Complete Resource Conservation and Recovery Act closure of the first and cleaning and sampling of the second pillar and panel vaulted tank (September 2003).
- Complete the Sodium-Bearing Radioactive Waste Treatment Facility Critical Decision 0 documents to support approval of Critical Decision 0 as a precursor to conceptual design (September 2003).
- Complete the Sodium Bearing Waste Treatment Facility Critical Decision 1 documents to support acquisition Executive (September 2004).
- Complete characterization of remaining liquids and solids in the 11 underground sodium bearing waste tanks (September 2004).

ID-INEEL-0030B / Soil and Water Remediation-2012
(life-cycle estimate $1,312,208K) 106,843 116,852 106,720

This PBS scope is focused on accelerated remediation of soil and groundwater contaminated by past operations and closure of legacy tank systems to remove or control unacceptable risk to the sole source Snake River Plain Aquifer serving Eastern Idaho. This includes completion of all current remedial actions required by the signed Comprehensive Environmental Response, Compensation, and Liability Act agreements and operation of the Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility. The scope also includes Voluntary Consent Order actions to characterize and close all known legacy tanks at the Idaho National Engineering and Environmental Laboratory. Activities will complete record of decision-required remediation at three Idaho National Engineering and Environmental Laboratory

facility areas/Waste Area Groups and complete all Voluntary Consent Order work. Further, the project will make significant progress towards remediation of contaminated soil from past nuclear programs, maintain all necessary Institutional Controls (remedy continuation) and complete the buried transuranic waste retrieval demonstration activities that supports the Radioactive Waste Management Complex remediation Record of Decision. Completion of a Comprehensive Environmental Response, Compensation, and Liability Act disposal facility and subsequent disposal of contaminated soils from the Idaho National Engineering and Environmental Laboratory areas will result in all but two facility areas/Waste Area Groups being available for new, unrestricted use by 2012. This scope also includes all monitoring to protect the Snake River Plain Aquifer and the nation's largest sagebrush steppe ecosystem. All project activities align with DOE's initiative to accelerate risk reduction, footprint reduction and site cleanup.

This PBS has three objectives that result in achieving the intended end-state of making all Idaho National Engineering and Environmental Laboratory (except Idaho Nuclear Technology and Engineering Center and Radioactive Waste Management Complex) available for alternate use under institutional control by 2012. The first objective is completion of the Comprehensive Environmental Response, Compensation, and Liability Act remediation at the Power Burst Facility/Auxiliary Reactor Area - Waste Area Group 4 by FY 2004, Central Facilities Area - Waste Area Group 5 by FY 2004, and Test Area North - Waste Area Group 1 by FY 2005. The groundwater remediation portion of Waste Area Groups 4, 5, and 1 will be transferred to PBS ID-INEEL-0030C, Soil and Water Remediation. The second is completion of the Voluntary Consent Order Resource Conservation and Recovery Act underground tank closures by 2012. Under the third objective significant cleanup progress is achieved at the three remaining Waste Area Groups, including completion of the Glovebox Excavator Method project at the Radioactive Waste Management Complex - Waste Area Group 7, the Idaho Nuclear Technology and Engineering Center - Waste Area Group 3, and balance of the Idaho National Engineering and Environmental Laboratory Sitewide soils and groundwater - Waste Area Groups 6 and 10, which will be included in PBS ID-INEEL-0030C, Soil and Water Remediation. (Former PBSs were ID-ER-101, ID-ER-102, ID-ER-103, ID-ER-104, ID-ER-105, ID-ER-107, ID-ER-108, ID-ER-109, ID-VCO-101, ID-SSI-101, and ID-SSR-101)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Support closure of the Radioactive Waste Management Complex consistent with the Performance Management Plan accelerated site closure goals. Specifically, operation of the Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility will allow final Comprehensive Environmental Response, Compensation, and Liability Act cleanup to be completed at former nuclear site areas and the Central Facilities Area. Completion of the waste excavation demonstration at Pit 9 will result in the first removal of transuranic waste from the Subsurface Disposal Area of the Radioactive Waste Management Complex in more than two decades. Additionally, completion of the draft feasibility study for final remediation of the Subsurface Disposal Area and completion of the conceptual design for a system to remove all buried transuranic waste from Pit 9 will lead to a Record of Decision for the Subsurface Disposal Area. These two projects are required to achieve final remediation of the half million cubic meters of radioactive waste in the Subsurface Disposal Area. In FY 2004 the following activities are planned to meet these site closure goals:
  - < Maximize disposal of contaminated materials in the Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility to accelerate completion of the Idaho National Engineering and Environmental Laboratory cleanup;
  - < Complete Glovebox Excavator Method at the Radioactive Waste Management Complex and demonstrate ability to retrieve buried transuranic waste at Pit 9;
  - < Complete conceptual design for the Stage III system to remove all buried transuranic waste from Pit 9 at the Radioactive Waste Management Complex;
  - < Continue drafting feasibility study for the final remediation of the ~100-acre Subsurface Disposal Area of Radioactive Waste Management Complex, due December 31, 2005;
  - < Complete Voluntary Consent Order hazardous waste determinations and disposition Voluntary Consent Order legacy waste items at Test Area North; and
  - < Obtain Resource Conservation and Recovery Act closure plan approval and begin closure activities for basin water treatment system (aka the PercPonds) at the Idaho Nuclear Technology and Engineering Center.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	13	41	3	141	157	90%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed Resource Conservation and Recovery Act closure of the Test Reactor Area's Engineering Test Reactor sodium loop (FY 2002).
- Characterized over 200 Voluntary Consent Order tanks (FY 2002).
- Completed remediation of the sanitary waste system and underground tank containing radionuclides and Program Control Document's at the Power Burst Facility area (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Completed the Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility Landfill Cell 1 and Evaporation Pond Phase I construction and completed construction of the Idaho Nuclear Technology and Engineering Center Service Wastewater Discharge Facility (FY 2002).
- Completed design and started construction on the Glovebox Excavator Method Project for Pit 9 at the Radioactive Waste Management Complex (FY 2002).
- Operated the new Pump and Treat Facility at Test Area North treating 115 million gallons of water and continue successful aquifer bioremediation (FY 2002).
- Removed 27,215 pounds of volatile organic compounds from subsurface using vapor vacuum extraction at the Radioactive Waste Management Complex (FY 2002).
- Place the first shipments of Comprehensive Environmental Response, Compensation, and Liability Act material in the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility cell (July 2003).
- Complete all remedial actions at Central Facilities Area and complete Test Area North soil remediation; and continue legacy hazardous waste tank characterization (September 2003).
- Complete Glovebox Excavator Method Project (Pit 9) Critical Decision 4 for start of operations to excavation (February 2004).
- Complete excavation of transuranic waste under Glovebox Excavator Method Project (Pit 9) (June 2004).
- Complete Central Facilities Area Waste Area Group 4 closeout and transfer to surveillance and maintenance project (September 2004).
- Complete Power Burst Facility Waste Area Group 5 Project closeout and transfer to surveillance and maintenance project (September 2004).

ID-INEEL-0040B / Nuclear Facility D&D-2012 (life-cycle estimate $151,334K)	**1,887**	**4,226**	**6,680**

This PBS scope focuses on the decontamination, decommissioning, and deactivation of the high-risk Idaho National Engineering and Environmental Laboratory nuclear facilities, which will accomplish the goal of expediting reduction of risk, and minimizing surveillance and facility maintenance costs. Specifically the PBS scope eliminates the immediate risks of contaminated water in spent nuclear fuel basins and accelerates deactivation of other excess nuclear facilities. The scope includes deactivation of four emptied spent fuel basins, and three excess nuclear test reactor structures including Materials Testing Reactor, Test Area North-607, Power Burst Facility, and Chemical Processing Plant-603 Building at the Idaho Nuclear Technology and Engineering Center and associated process buildings.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The spent nuclear fuel basins are a risk to workers, public health and the environment due to the potential for contaminated water to leak to the Snake River Plain Aquifer. Total water volume in the four basins is nearly 2.5 million gallons. The deactivation of the spent fuel pools (including removal of water, equipment and debris), are the most critical activities in achieving risk reduction for the Idaho National Engineering and Environmental Laboratory's aging pools. Any contaminated liquids stored over the Snake River Plain Aquifer are a critical concern of the stakeholders. In addition, these deactivation activities support reducing surveillance and maintenance requirements. This project is key to reducing risk and consolidating the Idaho National Engineering and Environmental Laboratory facilities to reduce the EM footprint. (Former PBS was ID-OIM-110)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

- Complete spent nuclear fuel canal deactivation at the Materials Test Reactor Canal. All hardware, sludge, and water will be removed. Contamination will be fixed in place to preclude spreading.
- Complete spent nuclear fuel pool deactivation at Test Area North-607 Pool. All hardware, sludge, and water will be removed. Contamination will be fixed in place to preclude spreading.
- Begin removal of spent nuclear fuel rack hardware at the Power Burst Facility Canal. Engineering and planning for water and sludge removal will be performed to support deactivation completion.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	13	15	87%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Prepared deactivation, decontamination, and decommissioning Project Execution Plan for the Idaho National Engineering and Environmental Laboratory (FY 2002).
- Materials and Test Reactor Canal: prepared Project Execution Plan for deactivation (FY 2002).
- Test Area North-607 Pool: completed Deactivation Plan (FY 2002).
- Power Burst Facility Canal: completed Conceptual Design Report for deactivation (FY 2002).
- Remove, package, and dispose of spent nuclear fuel racks, canisters, and test train hardware at Materials Test Reactor Canal (September 2003).
- Remove and dispose of out of service water treatment equipment and start sludge removal activities at Test Area North - Building 607 pool (September 2003).
- Deactivate Materials Test Reactor Canal to the proposed end-state (September 2004).
- Deactivate Test Area North pool to the proposed end-state (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

ID-INEEL-0050B / Non-Nuclear Facility D&D-2012 (life-cycle estimate $244,074K) 3,779 8,464 9,059

This PBS, in conjunction with PBS ID-INEEL-0040B, Nuclear Facility Decontamination and Decommissioning-2012, will accomplish expedited reduction of environmental risk, and minimize surveillance and maintenance costs associated with excess facilities. This activity is key to consolidating the Idaho National Engineering and Environmental Laboratory facilities in accordance with the Performance Management Plan goal to reduce the EM footprint. Specifically, this activity accelerates decontamination and decommissioning of excess non-nuclear facilities. The scope of this PBS includes removal and final disposition of non-nuclear facilities at Test Area North and Power Burst Facility/Waste Experimental Reduction Facility/Waste Reduction Operations Complex. This work includes removal of hazardous materials and demolition of industrial facilities that are excess to the Idaho National Engineering and Environmental Laboratory missions including forty one excess facilities and several industrial structures at the Technical Services Facility area of Test Area North, leaving the Fire Station, transformer station, and an active pump and treat facility when completed. Cleanup activities also includes plans to demolish 25 buildings in the Power Burst Facility Area. (Former PBS was ID-OIM-110)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Idaho National Engineering and Environmental Laboratory.

- Demolition of Test Area North-616 will allow for remedial actions for underground tanks and adjacent soils under Waste Area Group 1 Comprehensive Environmental Response, Compensation, and Liability Act requirements. These activities lead to final closure and risk reduction including demolition of Test Area North-602 administration building and Test Area North-609 maintenance facility.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Radioactive Facility Completions (Number of Facilities)	1	0	3	8	19	42%
Industrial Facility Completions (Number of Facilities)	0	3	4	53	71	75%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed decontamination and demolition of Test Area North-615 (FY 2002).
- Inactivated 43 facilities containing more than 200,000 square feet (FY 2002).
- Complete demolition of seven industrial buildings and structures at Test Area North, two of which are large above ground oil storage tanks (2003/2004).
- Complete consolidation and reconfiguration of the Test Area North to determine long-term responsibility for facilities (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

OR-0013B / Solid Waste Stabilization and Disposition-2012
(life-cycle estimate $982,798K) 89,622 76,574 50,556

This PBS scope collects, stores, treats, and disposes of low-level, mixed low-level, hazardous, and sanitary waste from the East Tennessee Technology Park. It also includes the operation of the Toxic Substance Control Act Incinerator, the Central Neutralization Facility, and all Oak Ridge landfills. Management of the Reservation's 646 m^3 of transuranic waste and the design, construction, and operation of the Transuranic Waste Processing Facility is also part of the scope. It partially includes East Tennessee Technology Park infrastructure services, including fire protection, utility services, environmental, safety, and health programs, real property management, power operations and maintenance, and capital improvements and repairs.

Both newly generated low-level waste (DOE Order 435.1) and hazardous waste (Resource Conservation and Recovery Act) require disposal within one year of generation. This project addresses waste dispositioned at the East Tennessee Technology Park under the Oak Ridge accelerated cleanup project through 2008, while the companion project (PBS OR-0013A, Solid Waste Stabilization and Disposition-2006) addresses all Melton Valley wastes, all legacy wastes at Y-12 and the East Tennessee Technology Park prior to 2006. (Former PBS was OR-151)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Office.

- Continue to operate the Transuranic Waste Processing Facility, all Oak Ridge Reservation landfills, and the East Tennessee Technology Park Toxic Substances Control Act Incinerator and Central Neutralization Facility. Responsibility for these operating facilities is retained because they are critical to the accelerated cleanup activities. The Transuranic Waste Processing Facility treats and packages for disposal all solid legacy transuranic waste and the transuranic sludge and liquids stored in various tanks. The Toxic Substances Control Act incinerator is used by other DOE sites, as there is no other outlet for these wastes. The Central Neutralization Facility for treats the effluent from the Toxic Substance Control Act Incinerator and other liquid waste streams.
- Provide support for a portion of the infrastructure services, such as fire protection, utility services, environmental, safety, and health programs, real property management, power operations and maintenance, and capital improvements and repairs.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	0	0	250	250	646	39%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	1,908	2,365	1,249	9,306	12,891	72%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Over 590,000 pounds of liquid waste and 174,000 pounds of solid waste were treated into Toxic Substance Control Act Incinerator (FY 2002).
- Closed the Construction and Demolition Landfill VI (FY 2002).
- Complete supernate construction and operational testing at the Transuranic Waste Treatment Facility (March 2003).
- Complete contact-handled-debris construction/operational testing at the Transuranic Waste Treatment Facility (January 2004).
- Dispose of 250 m^3 of transuranic waste (September 2004).
- Complete Site Treatment Plan milestone for West End Treatment Facility sludge (September 2004).

OR-0031 / Soil and Water Remediation-Offsites (life-cycle estimate $105,397K) 0 4,242 3,773

This project reduces risk and accelerates the cleanup of three privately owned properties that were contaminated due to the sale of contaminated materials from the DOE to private companies. The Department is responsible for the cleanup of these sites under the Tennessee Superfund law. The three sites are the Atomic City Auto Parts Site in Oak Ridge and the David Witherspoon, Inc. 901 and 1630 sites in Knoxville. The properties, which cover 64 acres combined, are in residential and commercial areas and are accessible to the public. Primary contaminants include uranium, polychlorinated biphenyls, and heavy metals. The Oak Ridge Performance Management Plan commits to the completion of these three sites by FY 2008. The cleanup actions at these sites will consist of removing, treating, and disposing of contaminated materials, equipment, soil, and sediment; demolishing facilities; and remediating groundwater.

Actions taken to date include removal of highly contaminated items from the sites (e.g., transformers and yellow-cake-contaminated materials) and completion of remedial investigations and feasibility studies. Cleanup of the Atomic City Auto Parts Site will be completed in 2003 with work at the Witherspoon Sites completed by 2008. Upon completion, all three sites are expected to be suitable for future industrial use. (Former PBS OR-821)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Office.

- Continue cleanup of the David Witherspoon, Inc. 901 site in Knoxville.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	1	0	6	10	60%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Complete Atomic City Auto Parts (September 2003).

OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense) (life-cycle estimate $100,278K) 2,918 4,585 5,665

This PBS scope covers decontamination, decommissioning, and remedial actions for the East Tennessee Technology Park facilities that were not involved in enriching uranium for commercial clients (per the Energy Policy Act of 1992). This project, in combination with PBS OR-0040, Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund), will complete the East Tennessee Technology Park cleanup by 2008 and will allow the closure of this major DOE site. The main activities will include decommissioning of the centrifuge development facilities at the site and the Toxic Substances Control Act Incinerator. The centrifuge facilities subproject includes 32 facilities covering 234,000 square feet. The Toxic Substance Control Act Incinerator facilities include 39 facilities and 59,000 square feet.

This scope also includes removal of centrifuge equipment that is stored inside the K-25 building. This equipment must be removed prior to K-25 demolition. The K-25 demolition is on the East Tennessee Technology Park site critical path and represents a major mortgage reduction opportunity. The project also includes surveillance and maintenance at the centrifuge and Toxic Substance Control Act Incinerator facilities while they await decontamination and decommissioning.

Finally, this project funds a portion of the site infrastructure services. The infrastructure services includes fire protection, utility services, environmental, safety and health programs, real property management, power operations, and maintenance, and capital improvements and repairs. (Former PBSs were OR-431 and OR-441)

In FY 2004, the following activities are planned to support the accelerated cleanup at the East Tennessee Technology Park.

- Removal of centrifuge equipment from the K-25 Building and initiate removal from the K-1200 and K-1600 complexes. Demolition of the K-25 Building is critical to accelerated closure of the East Tennessee Technology Park and represents a significant mortgage reduction.
- Provide for a portion of the East Tennessee Technology Park site infrastructure services including fire protection, utility services, environmental, safety, and health programs, real property management, power operations and maintenance, and capital improvements and repairs and surveillance and maintenance of the centrifuge facility.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	0	0	0	7,035	7,035	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Initiate centrifuge equipment removal from K-25 and K-27 (September 2003).
- Performed surveillance and maintenance on the centrifuge facility (FY 2002; September 2003 and 2004).
- Complete centrifuge equipment removal from K-25 and K-27 (September 2004).
- Initiate centrifuge equipment removal from K-1200 and K-1600 building complexes at the East Tennessee Technology Park (September 2004).

RL-0011 / NM Stabilization and Disposition-PFP (life-cycle estimate $1,630,193K) 109,161 124,870 145,360

The Plutonium Finishing Plant Complex consists of several buildings that were used for defense production of plutonium nitrates, oxides and metal from 1950 through early 1989; some of these materials and other special nuclear materials (such as the polycubes) remain on surfaces in the enclosed process areas (gloveboxes, etc) and in interim storage containers. The bulk of the plutonium bearing materials at the Plutonium Finishing Plant are stored in vaults. This PBS implements actions to place the special nuclear materials and residues that resulted from plutonium production in a suitable form for long-term storage at Savannah River Site or at another approved DOE facility, to cleanout the facilities and demolish them to slab on grade and to maintain the facilities until they are demolished. These actions can be grouped in the following key categories: 1) stabilization, packaging and shipment of the special nuclear materials and residues from the Plutonium Finishing Plant Complex; 2) maintaining the facilities in a safe and secure manner until the completion of demolition; and 3) cleanout and demolition of facilities.

The following key activities will be performed to reach slab on grade and reduce the protected area footprint:1) complete stabilization of special nuclear materials and place the materials in about 3,000 DOE Standard 3013 containers; 2) ship the DOE Standard 3013 containers to the Savannah River Site or a DOE approved interim storage facility; 3) complete repackaging and shipment of 3,467 kilograms of bulk plutonium residues to Hanford's Central Waste Complex for transport to the Waste Isolation Pilot Plant; and 4) complete facility cleanout and demolish the Plutonium Finishing Plant Complex to slab on grade. These activities eliminate significant hazards to workers, the public, the environment and long-term surveillance and maintenance risks and costs.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

As of September 30, 2002, the Plutonium Finishing Plant has packaged 500 containers that meet DOE Standard 3013 (50 year container design life) and repackaged 2,396 kilograms of bulk plutonium residues for eventual shipment to the Waste Isolation Pilot Plant. Current progress to date also includes completion of stabilization and packaging of Hanford ash and all plutonium solutions. This supports interim Defense Nuclear Facilities Safety Board milestones for completion of all material stabilization.

This PBS also funds a subproject that would have been appropriated as separate line-item control in the past, but is not proposed as separate control in FY 2004 or the future. This subproject will provide Alternative Storage for the Plutonium Finishing Plant Special Nuclear Material if transport to the Savannah Rive Site is delayed (FY 2003 appropriation of $900,000, and a FY 2004 request $5,800,000). For more information on this subproject, a Subproject Detail description is included in the Appendix.

The end-state for this PBS is the removal of all special nuclear materials from the Plutonium Finishing Plant to a long-term storage facility, reduction of the security protected area and demolishing of the Plutonium Finishing Plant Complex to slab on grade by September 30, 2009. (Former PBSs were RL-CP01, RL-CP02, RL-CP03, RL-RS01, RL-SC01, RL-SS01, RL-SS02, RL-SS03, and RL-SS04)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Richland Office.

- Stabilization, packaging and shipment of the special nuclear materials and residues from the Plutonium Finishing Plant Complex:
  - < Complete repackaging of all remaining residues and transport them to Hanford's Central Waste Complex for eventual transport to the Waste Isolation Pilot Plant.
  - < Complete stabilization and packaging of plutonium-bearing oxides and mixed oxides at the Plutonium Finishing Plant by the milestone date of February 18, 2004, placing these materials in a form for long-term storage.
  - < Continue with shipments of stabilized material from the Plutonium Finishing Plant to the Savannah River Site or construct alternate storage facility so as to support completion of special nuclear material de-inventory by September 30, 2005, nine years ahead of schedule.
  - < Complete definitive design and construction of the alternative on-site special nuclear material storage facility if the shipment to the Savannah River Site is not initiated in FY 2003.
- Cleanout and demolition of facilities:
  - < Work will continue on accelerated de-inventory and decommissioning activities with emphasis on legacy plutonium holdup removal in the main former processing building (234-5Z), deactivation of the inactive incinerator building and protected area reduction.
  - < Continue Plutonium Reclamation Facility canyon cleanout activities and product receiver can disposal.
  - < Start glovebox cleanout and removal activities, process duct removal, and process vacuum system removal activities in the 234-5Z building.
- Maintaining the facilities in a safe and secure manner until the completion of demolition:

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- < Conduct annual surveillance and maintenance activities to ensure safe operation of the Plutonium Finishing Plant Complex and secure storage of special nuclear materials.
- < Support the International Atomic Energy Agency non-proliferation activities.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Plutonium Metal or Oxide Packaged for Long-Term Storage (Number of Containers)	100	2,000	500	3,000	3,000	100%
Plutonium or Uranium Residues Packaged for Disposition (kg/bulk)	1,731	895	176	3,467	3,467	100%
Materials Access Areas Eliminated (Number of Areas)	0	0	0	0	2	0%
Nuclear Facility Completions (Number of Facilities)	1	2	0	3	60	5%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed Project 98-D-453, Plutonium Stabilization and Packaging System, one year ahead of schedule followed by hot startup (FY 2002).
- Completed disposition of Hanford ash by shipment to Hanford's Central Waste Complex (FY 2002).
- Completed solutions stabilization and repackaging (FY 2002).
- Successfully started sand, slag, and crucible and polycube stabilization (FY 2002).
- Complete polycube stabilization and alloy repackaging (September 2003).
- Complete alternate vault preliminary design (September 2003).
- Provide support to the International Atomic Energy Agency non-proliferation activities (September 2003).
- Commence startup of legacy plutonium holdup and glovebox removal activities in Building 234-5Z (September 2003).
- Commence routine shipments of special nuclear material to the Savannah River Site (or alternative site) (September 2003).
- Complete Plutonium Reclamation Facility Canyon Cleanout Plan and begin cleanout work (September 2003).
- Complete stabilization and packaging of plutonium bearing oxides (February 2004).
- Complete repackaging of residues and transport them to the Central Waste Complex (February 2004).
- Complete definitive design and construction of alternative nuclear materials storage facility if shipment to the Savannah River Site is delayed (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Start glovebox cleanout and removal activities in Building 234-5Z (September 2004) .

RL-0012 / SNF Stabilization and Disposition (life-cycle estimate $1,729,436K) 208,940 184,574 172,457

This project will move approximately 2,100 metric tonnes of degrading spent nuclear fuel, and up to 45 m^3 of radioactive sludge generated from the degrading fuel, from wet storage in the K Basins near the Columbia River to safe, dry interim storage on the 200 Area Central Plateau. The K Basin facilities are well past their design lives and are a major threat to the environment because of the effect a loss of radioactive basin water would have on the surrounding soil and the Columbia River. End-State (October 30, 2005): all spent nuclear fuel will be removed from the K Basins, repackaged, dried, and transported to interim storage at the Canister Storage Building; radioactive sludge will be removed from the K Basins and transported to T-Plant for on-site interim storage; debris from the K Basins will be disposed of in the 200 Area; K Basin water will be transported to the 200 Area for treatment and disposal; and all non defense production spent nuclear fuel will be consolidated in the Central Hanford 200 Area pending final disposition. All 100 Area facilities will be transitioned to the River Corridor Contractor (PBS RL-0041, Nuclear Facility Decontamination and Decommissioning-River Corridor Closure Project) for final disposition.

As of November 30, 2002, approximately 800 metric tonnes of a total of approximately 2,100 metric tonnes have been removed from the K Basins. Debris removal has been initiated and sludge removal will be initiated in FY 2003. Final debris and water removal is to follow, supporting complete removal of all fuel, sludge, debris and water from K-East Basin by June 30, 2005 (a three month acceleration), and from K-West Basin by September 30, 2005 (a one year acceleration), eliminating a significant risk to the Columbia River and the public. Deactivation and transition of the 100 K facilities will occur by October 30, 2005, nearly 21 months early. This project's completion will mean the removal of more than 55 million curies of radioactivity - more than 95 percent of the radioactivity in Hanford's River Corridor. (Former PBSs were RL-CP01, RL-CP02, RL-CP03, RL-RS03, RL-SC01, RL-SS01, RL-SS02, RL-SS03, and RL-SS04)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Richland Office.

- Complete transfer of all spent fuel from K-East Basin to K-West Basin by May 2004, for subsequent processing and removal.
- Complete the removal of all spent fuel from the K Basins and place in dry storage in the Canister Storage Building by July 2004.
- Complete full-scale sludge removal from the K Basins by August 2004. This supports the complete removal of all fuel, sludge, debris and water from K-East Basin by June 30, 2005, and from K-West Basin by September 30, 2005.
- Deactivation and transition of the 100 K facilities will occur by October 30, 2005, 21 months ahead of the regulatory commitment date (July 31, 2007).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Spent Nuclear Fuel Packaged for Final Disposition (MTHM)	511	855	631	2,124	2,124	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed removal of cumulative total of 638 metric tonnes heavy metal of fuel from K-West Basin (FY 2002).
- Initiate transfer of K-East Basin fuel to K-West for processing and removal (FY 2002).
- Compete removal of an additional 855 metric tonnes heavy metal of spent nuclear fuel (cumulative total of 1,493 metric tonnes heavy metal) from the K Basins (September 2003).
- Complete construction of the sludge water system which will be used for sludge removal (May 2003), and initiate K Basin sludge removal (August 2003). This supports the complete removal of all fuel, sludge, debris and water from K-East Basin by June 2005 and for K-West Basin by September 2005, a three-month and one-year acceleration, respectively.
- Complete transfer of all K-East fuel to K-West Basin for subsequent processing and removal (May 2004).
- Complete K Basin sludge removal (August 2004).
- Initiate full scale K-East Basin water removal (September 2004).

RL-0041 / Nuclear Facility D&D-River Corridor Closure Project (life-cycle estimate $3,779,435K) 147,233 160,220 182,639

The Hanford site supported national defense programs, largely through production of nuclear materials. One legacy of Hanford operations is a significant waste inventory of radioactive and regulated chemical materials. Past releases of these materials have contaminated Hanford's facilities and environment. Over 625,000 m^3 of solid waste, containing an estimated 4.8 million curies of radioactive materials, were buried in Hanford site soils, while 1.7 trillion liters of liquid waste containing radioactive and chemical contamination have been discharged to the ground. Early disposal practices resulted in contamination above current Federal standards at Hanford.

The River Corridor Closure Project will complete remediation of 758 waste contaminated sites, (including 50 burial grounds), and decontamination, decommissioning, and demolition of 283 facilities that are adjacent to the Columbia River. This cleanup will be completed in accordance with the interim Record of Decision. The Project will remediate the sources of radiological and chemical contamination that threaten the air, groundwater, or the Columbia River. The work includes digging up contaminated soil, constructing interim safe storage (cocooning) for the reactors, demolishing facilities in the old reactor complexes and facilities in the 300 Area, and construction of surface barriers/caps, when needed, over contaminated sites.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

This PBS is targeted for completion by 2012, with three notable exceptions: 1) the 8 cocooned reactors will remain in place through 2035; 2) cleanup of the 618-10 and 618-11 burial grounds will be completed in 2018 (funded by PBS RL-0040, Nuclear Facility Decontamination and Decommission-Remainder of Hanford and Hanford Operation); and 3) Operation of the Environmental Restoration Disposal Facility after 2012 will be included in PBS RL-0013, Solid Waste Stabilization and Disposition-200 Area (2035 Accelerated Completions). Operation of the Environmental Restoration Disposal Facility through 2012 is in this PBS. An estimated 15.9 million metric tonnes of life-cycle remediated waste generated during Hanford site-wide cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act will be dispose of in the Environmental Restoration Disposal Facility.

At completion in 2012, DOE will seek approval to delist from the National Priority List the project sites, cleaned up according to interim Record of Decisions. There will be limited DOE activities remaining in the River Corridor after the 2012 completion including operation of the Pacific Northwest National Laboratory Facilities in the 300 Area. The River Corridor project has the goal of ensuring that the land is sufficiently clean to support transfer of the land to the Department of Interior. At that time, the footprint of active Hanford cleanup will be reduced from the present 586 square miles to about 75 square miles. At the end of FY 2002, activities completed included: cocooning 2 of 8 reactors (the 9th reactor, "B Reactor" may become a museum); remediation of approximately 225 of the 758 life-cycle waste sites and burial grounds, and 7 of 283 excess facilities, the removal of 1 metric tonne of spent nuclear fuel from the 300 Area which is near the river and local community; and disposed a total of 3.4 million metric tonnes of remediation waste in the Environmental Restoration Disposal Facility. This project accelerates the completion of the River Corridor cleanup more than 20 years earlier than previously planned. (Former PBSs were RL-RC01, RL-RC02, RL-RC03, RL-RC05, RL-RC06, and RL-SS01)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Hanford Site.

- Complete cocooning of the H Reactor.
- Complete excavation and removal of the 100 B/C Area process effluent pipelines to ensure completion by FY 2005.
- Continue safe storage of approximately 825 metric tonnes of unirradiated uranium fuel in 300 Area facilities (scheduled to dispose of on-site in the 200 Area during FY 2006).
- Continue surveillance and maintenance of radiological facilities.
- Continue Shielded Material Facility cleanout at 324 Building.
- Continue decontamination and legacy waste cleanup activities at the 327 Building.
- Process and dispose of, in the Environmental Restoration Disposal Facility, 500,000 tons of remediation waste from waste sites.
- Initiate treatment of waste received from burial grounds 118-K-1.
- Continue the treatment of land disposal restricted waste from 618-5 burial ground excavation.
- Complete decontamination and demolition of 111B Decon Station and 1722N Decon Building.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Enriched Uranium Packaged for Long-Term Storage (Number of Containers)	0	0	0	1,648	2,958	56%
Depleted and Other Uranium Packaged for Disposition (metric tonnes)	0	0	0	3,100	3,100	100%
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	14	0%
Radioactive Facility Completions (Number of Facilities)	0	1	2	3	50	6%
Industrial Facility Completions (Number of Facilities)	6	1	0	8	219	4%
Remediation Complete (Number of Release Sites)	12	32	37	294	758	39%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed remedial action of 12 waste sites in the 100 Area (FY 2002).
- Completed cocooning (or interim safe storage) at DR Reactor (FY 2002).
- Ancillary facility demolition at, and progress on cocooning of, the D Reactor (at 85 percent), F Reactor (at 86 percent), and H Reactor (at 39 percent) (FY 2002)
- Completed deactivation work in a high risk area of 324 and 327 facilities that resulted in removal of 445,000 curies away from the River (FY 2002).
- Removed and disposed of 2,000 meters (6,600 feet) of contaminated piping from the 100 B/C Area (FY 2002).
- Began remediation of the 618-5 Burial Ground (FY 2002).
- Environmental Restoration Disposal Facility - processed and disposed 665,000 tons of remediation waste excavated from waste sites in the 100 and 300 Areas (FY 2002).
- Completed packaging, removal, and transfer 4 of 7 shipments of Building 324 spent nuclear fuel assemblies, rods, segments, and fragments to the 200 Area (FY 2002).
- Complete 100-HR-3 Phase III Barrier Emplacement to prevent groundwater contamination from reaching the Columbia River (June 2003).
- Initiate remedial action of liquid waste site in the 100-KR-1 operable unit (August 2003).
- Complete cocooning of F Reactor (100 percent), D Reactor (90 percent), and continue cocooning H Reactor (56 percent) (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete remediation of a major liquid waste site in the 100 F-Area (September 2003).
- Complete remediation excavation of the 618-5 burial ground (September 2003).
- Complete remediation of Waste Sites in 300-FF-1 Operable Unit (December 2003).
- Complete 105-H Reactor Interim Safe Storage activities (September 2004).
- Complete excavation/removal of 100 B/C Process Effluent Pipeline (September 2004).
- Complete 111B Decon Station and 1722N Decon Building (September 2004).
- Complete of 35 other remediations (for a total of 37); complete action of 37 waste sites (September 2004).
- Dispose 500,000 tons of remediation waste from waste sites and burial remediations in the Environmental Restoration Disposal Facility (September 2004).

ORP-0060 / Major Construction-Waste Treatment Plant (life-cycle estimate $6,017,331K) 665,000 690,000 690,000

This PBS scope includes line-item project 01-D-416, Waste Treatment and Immobilization Plant, which will design, construct, and commission the treatment plant. This facility is critical to the completion of the Hanford tank waste program by 2035 by providing the primary facility to immobilize (vitrify) the high-level radioactive liquid waste at the Hanford Site. The Waste Treatment and Immobilization Plant Complex currently consists of five major facilities: Pretreatment facility, Low Activity Waste Vitrification facility, High-Level Waste Vitrification facility, Analytical Laboratory, and the Balance of Facilities. The Pretreatment facility will separate the Hanford radioactive tank waste into low-level and high-level waste fractions. The high-level waste fraction will be sent to the High-Level Waste Vitrification facility for immobilization, ready for disposal at a national geologic repository. The low-level waste fraction will be sent to the Low Activity Waste Vitrification facility for immobilization, ready for disposal at the Hanford Site. The Analytical Laboratory will provide real-time analytical support for plant operations. Office facilities, chemical storage, site utilities, and infrastructure are provided as part of the Balance of Facilities.

To date, 40 percent of design and 6 percent of construction has been completed, including placement of approximately 8 percent of structural concrete. The construction of the Waste Treatment and Immobilization Plant began in July 2002, and will be completed in 2007. Commissioning of major facilities will begin in 2007 and be completed in 2010, almost one year ahead of schedule. The end-state of this project will be the completion of the Waste Treatment and Immobilization Plant Hot Commissioning in FY 2010. To finish the end-state, the design, construction, and commissioning must be completed. (Former PBS was ORP-TW06LT)

In FY 2004, the following activities are planned to support the accelerated cleanup of the River Protection Office.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- The Waste Treatment and Immobilization Plant will reach 75 percent of its detailed design and engineering needed to support an aggressive construction schedule;
- Major procurements will be placed for high-level waste melter materials and equipment.
- Continued placement of structural concrete for up to a total of 45 percent complete (of a total of 240,000 cubic yards); installation of the first 15 percent of 21,000 tons of structural steel; installation of the first 5 percent of process pipe (700,000 linear feet); and installation of nearly 15 percent (of a total 3,760,000 pounds) of heating, ventilation, and air conditioning ductwork.
- Commissioning activities will begin with many of the support facilities, including the chiller plant, water treatment plant, and simulator building.
- Complete 30 percent of the construction of the Waste Treatment and Immobilization Plant. This will allow the treatment of the tank waste to begin on schedule which is critical to achieving closure of the Hanford Site by 2035.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Initiated construction on two of the project's three main facilities: Low-Activity Waste Vitrification and High-Level Waste Vitrification (FY 2002).
- Placement in excess of 14,300 cubic yards (about 6 percent of the total) of structural concrete and installation of 5,300 tons of reinforcing steel (FY 2002).
- Continued with design, engineering, planning and site preparation of the Waste Treatment and Immobilization Plant (FY 2002).
- Initiate construction of the Pretreatment Facility (November 2002).
- First Placement Structural Steel for Low Activity Waste Facility (April 2003).
- First Placement Structural Steel for High-Level Waste Facility (May 2003).
- Continue design and engineering to 55 percent complete (September 2003).
- Continue the Waste Treatment and Immobilization Plant construction to 12 percent complete (September 2003).
- Initiate construction of the Analytical Laboratory (October 2003).
- First Placement Structural Steel for Pretreatment Facility (October 2003).
- Start commissioning of steam plant, chiller/compressor facility, etc. (Balance of Facilities) (November 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continued placement of up to 45 percent (of a total 240,000 cubic yards) of structural concrete; installation of the first 15 percent of 21,000 tons of structural steel; installation of the first 5 percent of the process pipe (a total of 700,000 linear feet); and installation of the nearly 15 percent of 3,760,000 pounds of heating, ventilation, and air conditioning ductwork (September 2004).
- Continue design and engineering to 75 percent complete (September 2004).
- Continue the Waste Treatment and Immobilization Plant construction to 30 percent complete (September 2004).

SR-0011B / NM Stabilization and Disposition-2012 (life-cycle estimate $4,504,244K) 345,563 367,592 367,388

At the end of the Cold War, the nuclear materials complex at the Savannah River Site contained a large inventory of nuclear materials in various forms and stored in many locations (raw materials, in-process, finished products, in vaults, reactor basins, etc.) in several facilities. Many of these nuclear materials were never intended to stay in their existing form and location when the national security mission ceased and the materials disposition mission began. These materials disposition activities began with the issuance of the Defense Nuclear Facilities Safety Board Recommendation 94-1 to stabilize "at-risk" nuclear materials, which might pose a significant risk to the safety of the workers, the public, and/or the environment. The Defense Nuclear Facilities Safety Board issued a supplemental recommendation 2000-1 to amplify the concern of the current Savannah River Site Program Performance Management Plan is intended to accelerate removal of the risks posed by these materials. The Savannah River Site has made real progress in cleanup in that more than 75 percent of the scheduled nuclear materials have been stabilized (109,000 of 143,300 items) and 42 of the 60 Defense Nuclear Facilities Safety Board commitments have been met.

The scope of this PBS is to accomplish operations of F- and H-Area facilities to complete stabilization/disposition of EM legacy nuclear materials and then either deactivate the facilities as part of the transition to long-term surveillance and maintenance or transfer ownership to other DOE program offices. The Savannah River Site will transition F-Area processing facilities to a safe suspension state and deactivate them by FY 2007, an acceleration of 6 years from the previous plan to accomplish this by 2012. Other DOE program offices are funding some activities that will occur concurrently with EM mission work associated with FB-Line (i.e., National Nuclear Security Administration highly enriched uranium blend down). Following completion of EM work in FY 2008, the H-Area facilities may be transferred to another program office having a continuing mission.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The remaining materials to be stabilized/dispositioned in F-Area include classified metals received from the Rocky Flats Environmental Technology Site, and the Savannah River Site metals, oxides and residues, depleted uranium solutions and oxides. Integral to the Performance Management Plan are the Cleanup Reform Account initiatives that support the accelerated deactivation of F-Canyon and FB-Line. This includes: the transfer of cold chemical makeup responsibilities to H-Canyon; the shutdown of Low Activity Waste and General Purpose Evaporators, and the Acid Recovery Unit; elimination of substantial surveillance and maintenance costs by disposition/solidification of the depleted uranium solutions and relocation of the PUREX solvent; disposition of depleted uranium oxide from buildings 728-F and 730-F; and elimination of infrastructure and safeguards and security requirements for significant portions of F-Area. Packaging and stabilization of metal and oxides in FB-Line is 75 percent complete and will be complete in FY 2006 (baseline) or FY 2005 (accelerated schedule).

The remaining materials to be stabilized/dispositioned in H-Area include: Sterling Forest Oxide; Plutonium-239 solutions; highly enriched uranium solutions; neptunium solutions; the Savannah River Site spent fuel assemblies; unirradiated Mk-22 tubes; miscellaneous fuels; Savannah River Site plutonium residues; and enriched uranium residues.

This PBS scope also incorporates the Receiving Basin for Off-Site Fuels. Receiving Basin for Off-Site Fuels will be de-inventoried in FY 2004 and deactivated in FY 2005 after which it will await final disposition. Incoming Foreign Research Reactor and domestic fuels will be received in the L-Basin. (Former PBSs were SR-NM01, SR-NM02, SR-SF03, SR-NM05, and SR-PED)

This PBS includes funding in FY 2004 of $3,000,000 for Project Engineering and Design, 04-D-414, and $1,134,000 for construction of the 3013 Container Surveillance Capability in 235-F. Also included is a subproject that would have been appropriated as a separate line-item control in the past, but is not proposed a separate control in FY 2004 or the future. This subproject will upgrade exhaust systems for the 221-H facility (FY 2004 request $685,000). For more information on this subproject, a Subproject Detail description is included in the Appendix.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- In F-Area - complete the suspension plan for the systems and components associated with the F-Canyon and FB-Line PUREX processes; continue packaging and stabilization of metal and oxides to DOE-STD-3013; and continue to characterize and repackage plutonium residues for disposition . These activities support the Performance Management Plan objective for accelerating the completion of F-Area activities by six years compared to the previous baseline
- In H-Area - complete dissolution of irradiated Mark 16/22 fuel assemblies and initiate dissolution of unirradiated Mark 22 assemblies; continue disposition of Table 5.2-1 Miscellaneous Fuels; continue to dissolve plutonium residues in HB-Line, Phase I; complete preparations for conversion of neptunium solutions to oxide in HB-Line Phase II.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Priority will be placed on Mk-16/22 dissolution and implementation of the disposition path for the resulting highly enriched uranium solution. The processing of Mk-16/22 spent nuclear fuel will be optimized to allow full utilization of H-Canyon dissolver capacity for other materials in the current program whose dissolution will not generate large quantities of highly enriched uranium solution. These activities are critical to enable the completion of stabilization of EM legacy nuclear materials in H-Area by FY 2008, a two-year acceleration from the previous baseline.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Plutonium Metal or Oxide Packaged for Long-Term Storage (Number of Containers)	0	120	423	543	750	72%
Enriched Uranium Packaged for Long-Term Storage (Number of Containers)	0	225	612	837	2,809	30%
Plutonium or Uranium residues Packaged for Disposition (kg/bulk)	89	39	78	338	414	82%
Depleted and Other Uranium Packaged for Disposition(metric tonnes)	0	1,815	0	1,815	23,182	8%
Spent Nuclear Fuel Packaged for Final Disposition (MTHM)	0	2	1	3	36	8%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed Plutonium Recovery and Extraction processing and commenced facility deactivation planning (FY 2002).
- Completed Bagless Transfer packaging of plutonium items from F-Canyon, and continued Bagless Transfer of Rocky Flats Plutonium Metal (FY 2002).
- Completed stabilization of Mk-53 Np targets, 9,000 gallons of pre-existing H-Area Plutonium-239, containing 100 kgs plutonium, and continue Mk-16/22 multi-year dissolution campaign (252 assemblies in FY 2002).
- Continue Sterling Forest Oxide multi-year dissolution campaign (297 assemblies in FY 2002).
- Successfully restarted HB-Line Phase II and began conversion of plutonium residue solutions to plutonium oxide from the Scrap Recovery Facility (FY 2002).
- Dissolved/dispositioned 276 plutonium residue containers (containing 89 kgs plutonium) Overall 688 out of 881 items complete (FY 2002).
- Received Foreign Research Reactor Spent Fuel (209 elements in FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continued basin de-inventory shipments to L-Basin (218 spent nuclear fuel storage units in FY 2002, Receiving Basin for Off-site Fuels total = 836).
- Completed K-Basin de-inventory September 30, 2002, and completed deactivation November 30, 2002 (FY 2002).
- MM-1, 4b - Complete K-Basin de-inventory and deactivation (March 2003).
- MM-1, 2c - DOE provides single-shell tanks to support FB-Line de-inventory to K-Area Materials Storage, shipping to 235-F and other (April 2003).
- Complete dissolution of supercritical fluid extraction and Mk53 (June 2003).
- MM-1, 2b - Package Rocky Flats classified metal through Bagless Transfer System (existing Project Baseline Incentives) (June 2003).
- Complete de-energizing of F Canyon Purex equipment in preparation for deactivation (September 2003).
- Initiate F-Canyon deactivation (October 2003).
- De-inventory fuel from Receiving Basin for Off-site Fuels basin (September 2004).
- Begin FB-Line Packaging and Stabilization of Plutonium Oxide (September 2004).
- Complete MK 16/22 legacy spent nuclear fuel dissolutions (September 2004).

VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy (life-cycle estimate $421,429K) 24,943 30,036 43,338

This PBS scope provides for the treatment, storage, and/or disposal of all legacy waste generated before FY 1999 at the Los Alamos National Laboratory. The waste was generated at 33 technical areas and is treated, stored, and disposed in compliance with applicable federal and state requirements. The Los Alamos National Laboratory is committed to complete waste disposition by FY 2010 consistent with the Performance Management Plan. The accelerated cleanup efforts will support acceleration of the schedule by 20 years. The cornerstone to the planned completion is Revision 19a to the Nuclear Regulatory Commission Safety Analysis Report for the TRUPACT-II (transuranic waste shipping container) transportation requirements. Revision 19a enables the Los Alamos National Laboratory to ship 2,000 above ground high activity drums to the Waste Isolation Pilot Plant without repackaging due to wattage limits. Another Nuclear Regulatory Commission exemption similar to Revision 19a will be required to ship below ground high wattage transuranic waste without repackaging.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Part of the FY 2010 plan includes funds for the Waste Isolation Pilot Plant provision of two additional transuranic waste characterization lines running simultaneously with the Los Alamos National Laboratories' characterization line. This accelerated schedule also includes: decontaminating and reducing the volume of the oversized boxes containing transuranic waste at the Decontamination and Volume Reduction System facility; characterizing and shipping 100 percent of transuranic waste inventory including transferring Sandia National Laboratory and Inhalation Toxicology Laboratory transuranic waste to the Los Alamos National Laboratory; and completing treatment and disposition of legacy mixed low-level waste. (Former PBS was AL013)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Los Alamos National Laboratory site.

- Permanently dispose of over 600 m^3 of legacy transuranic waste through an integrated strategy of sorting, segregating, decontaminating and shipping to the Waste Isolation Pilot Plant. The total life-cycle quantity to be disposed is about 4,000 m^3.
- In FY 2004, the Los Alamos National Laboratory will complete shipment of 2,000 drums and initiate retrieval of legacy transuranic waste stored below grade.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	15	412	618	1,330	4,420	30%
Low-Level and Mixed Low-Level Disposed (m^3)	42	24	0	483	483	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- The Department of Energy and the Los Alamos National Laboratory justified Revision 19a exemption and received the Nuclear Regulatory Commission approval to ship high-wattage transuranic waste to the Waste Isolation Pilot Plant, which will reduce the number of these shipments by 2/3's and is a key factor in completing the legacy waste program 20 years earlier than planned (FY 2002).
- Treated and disposed of 42.14 m^3 of mixed low-level waste out of approximately 70 m^3 of remaining waste (FY 2002).
- Began operation of the Decontamination and Volume Reduction System that allowed for 12 oversized transuranic waste boxes to be processed, reducing transuranic waste volume by 80 percent (FY 2002).
- Decrease legacy transuranic waste volume by 412 m^3 (10 percent of total to be disposed of through 2010) (September 2003).
- Dispose 24 m^3 of legacy mixed low-level waste (September 2003).
- Decrease legacy transuranic waste volume by 600 m^3 (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

VL-PX-0030 / Soil and Water Remediation-Pantex (life-cycle estimate $436,775K) 13,447 15,518 18,692

Since the early 1950's, the Pantex Plant produced high explosives for nuclear weapons and assembled and disassembled nuclear weapons. These operations contaminated soils and portions of the upper or perched groundwater with high explosives, metals, and solvents; and minute traces of constituents have been identified in the underlying Ogallala Aquifer. In 1989, the U.S. Environmental Protection Agency conducted a Resource Conservation and Recovery Act Facility Assessment of the Pantex Plant and identified 144 Solid Waste Management Units (250 release sites). This Assessment resulted in an Environmental Protection Agency Order stipulating response measures for these release sites. The Pantex Environmental Restoration Project became part of the Plant permit in 1991with the Pantex site added to the National Priorities List (Comprehensive Environmental Response, Compensation, and Liability Act) in 1994.

Since the environmental remediations began, the Texas regulatory authority has approved 93 of 250 release sites as requiring no further action. Interim corrective measures have been initiated at the higher risk release sites, most notably the operation of a groundwater pump and treatment system for the perched groundwater beginning in 1996 and the operation of a Soil Vapor Extraction system beginning in 2002 at the Burning Grounds area of the Plant, near adjacent property owners. In addition, the project is characterizing trace contamination in the Ogallala Aquifer (a regional drinking water source) and, as a precautionary measure, conducting routine sampling of neighboring residential wells and providing bottled water to those residences.

The Pantex Performance Management Plan (July 2002) describes the strategic initiatives, key objectives, and milestones necessary to complete the remaining remediation activities by the end of FY 2008. Under this accelerated cleanup plan, Pantex will have completed all investigations by May 2004, which is necessary to remain under the current state cleanup standards and not become subjected to new standards effective May 2005. By September 2008, Pantex will have completed all corrective measures to reduce risk. This will include continued operation of the pump and treatment system and, if feasible, the deployment of in-situ technologies (e.g., bioremediation) to mitigate perched groundwater contamination; removal or containment of source term contamination in surface and subsurface soils using hot spot removal, engineered barriers, soil vapor extraction, and other technologies; and implementation of a risk-based compliance plan approved by the regulators for the protection of the Ogallala Aquifer. In FY 2009, these sites may transfer to the landlord for long-term stewardship. (Former PBS was AL-014)

In FY 2004, the following activities are planned to support the accelerated cleanup of Pantex.

- Pantex will complete the Ditches and Playas Resource Conservation and Recovery Act Facility Investigation Report, Zone 12 Soil Resource Conservation and Recovery Act Facility Investigation Report, and the Zone 11/12 Perched Groundwater Resource Conservation and Recovery Act Facility Investigation Report. These actions are critical to completing investigation of release sites by May 2004 and to meeting the Performance Management Plan milestones " Acceleration of Soil Remediation" and "Acceleration of Perched Groundwater Remediation" for completion of all soil corrective actions by May 2006 and perched groundwater corrective actions by October 2007.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue pump and treatment of the perched groundwater and evaluation of more efficient cleanup technologies. These actions are necessary to mitigate the contaminated plume which has migrated approximately 1/4 mile off-site and to meeting the Performance Management Plan milestone “Acceleration of Perched Groundwater” for completion of all perched groundwater corrective actions by October 2007.
- Complete the Burning Grounds Soil Vapor Extraction Interim Corrective Measure (FY 2004). This treatment system began operation in FY 2002 and is key to mitigating a significant source of volatile organic compound soil contamination and to meeting the Performance Management Plan milestone "Acceleration of Soil Remediation" for completion of all soil corrective measures by May 2006.
- Complete Ecological and Human Health Risk Assessments. This action is key to evaluating risk of source term sites, upon which corrective action decisions will be based, and to meeting the Performance Management Plan milestones "Acceleration of Soil Remediation" and "Acceleration of Perched Groundwater Remediation" for completing all soil and perched groundwater corrective measures by May 2006 and October 2007 respectively.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	0	2	0	95	250	38%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Constructed and started operations of Soil Vapor Extraction System to remove vadose zone contamination near plant boundary. This system is removing significant contamination in the soil and a major potential source to the Ogallala aquifer, and it is key to completing the Performance Management Plan Milestone “Acceleration of Soil Remediation” for completing all soil corrective actions by May 2004 (FY 2002).
- Complete 8 Resource Conservation and Recovery Act Facility Investigation Reports as follows: complete Fire Training Area Burn Pits and Burning Grounds soils (FY 2002) and Zone 10 soils (January 2003); Zone 11 soils (April 2003); Burning Grounds Groundwater (September 2003); Zone 12 soils (February 2004); Ditches and Playas (April 2004); and Zone 11/12 Perched Groundwater (September 2003). These documents are necessary to remain under the current state cleanup regulations that will be replaced by more stringent regulations (effective May 2005), and for meeting the Performance Management Plan acceleration of soil remediation and acceleration of perched groundwater remediation (i.e., complete all soil and perched groundwater corrective measures by May 2006 and October 2007, respectively).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

VL-PX-0040 / Nuclear Facility D&D Pantex (life-cycle estimate $17,860K) 100 100 2,741

The Pantex Deactivation and Decommissioning project reduces the plant footprint and risks to workers, public health, and the environment through safe shutdown, decontamination, and demolition of contaminated surplus facilities. The PBS scope began in FY 2002 with the transfer of the following four surplus facilities from Plant Operations to Environmental Management: Building 12-24 Complex (multiple buildings/structures), Zone 10 Ruins (multiple buildings/structures), Building 8-008, and Building 11-44. These facilities represent approximately 1 million square feet, are 50 to 60 years old, and, in some cases, are a contributing source of legacy contaminants into the environment. Project activities include hazard characterization and controls; termination of existing utilities; decontamination; and removal and recycling/disposal of plant equipment and structures (e.g., piping, concrete pads, roofs, underground concrete walls). Remediation of underlying soil and groundwater may be required for some facilities, and will be coordinated with the Pantex Environmental Restoration Project (VL-PX-0030) consistent with Environmental Management accelerated cleanup objectives. These facilities are targeted for completion of deactivation and decommissioning activities during FY 2004 through FY 2007. When completed, the facility sites may be transferred to the landlord for potential reuse or long-term monitoring. (Former PBS was AL-EF-01)

In FY 2004, the following activities are planned to support the accelerated cleanup of Pantex under the Albuquerque Office.

- Complete demolition of the Zone 10 Ruins and initiate actions associated with demolition of Building 12-24 Complex to reduce facility footprint and risk to workers, public health, and the environment.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Industrial Facility Completions (Number of Facilities)	0	0	0	1	5	20%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Demolition of Building 8-008 (FY 2002).
- Complete facility characterization and stabilization activities for Zone 10 Ruins, Building 12-24 Complex, and Building 11-44. These activities reduce risks to workers and support the performance plan milestone “Acceleration Footprint Reduction, (Decontamination and Decommissioning)” for the demolition of these facilities by September 2007 (September 2003).
- Complete demolition of Zone 10 Ruins and initiate actions for the demolition of Building 12-24 Complex (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

VL-NV-0013 / Solid Waste Stabilization and Disposition-Nevada Test Site (life-cycle estimate $81,755K) 10,910 8,133 10,363

The Solid Waste Stabilization and Disposition PBS scope includes on-site transuranic and mixed transuranic waste and material, including storage, treatment (as needed), and disposal/disposition. Activities include characterization, certification, and shipment of approximately 1,650 drums of waste to the Waste Isolation Pilot Plant for disposal; resizing and dispositioning 58 oversized boxes of mixed transuranic waste; disposition of 248 drums of classified material and two experimental spheres; and safe, compliant storage of all of the above until disposition. The Waste Examination Facility, Transuranic Pad Storage Building, and the classified material storage area are maintained with appropriate authorization bases and will be transferred or decommissioned upon completion of the scope. Inspections of mixed transuranic waste will be conducted according to hazardous waste requirements, as mandated by the Resource Conservation and Recovery Act, until waste is dispositioned.

Transuranic waste in legacy drums will be shipped to the Waste Isolation Pilot Plant for disposal which will reduce the risk to the Nevada Test Site workers and the environment resulting from continued storage. Transuranic waste with no current path forward for disposition will have a new technology implemented at the Nevada Test Site. If the proposed treatment for the Nevada Test Site legacy transuranic waste is unsuccessful, the Western Small Quantity Site Acceleration Program identified in the Waste Isolation Pilot Plant Performance Management Plan will be the alternative path forward. These activities will eliminate the need for continued storage of classified material and will allow all the Nevada Test Site transuranic waste related facilities to be decontaminated and transitioned to other uses. The accelerated end date for transuranic waste disposition is FY 2007 under strategic initiative number five in the Nevada Performance Management Plan (Former PBS was NV-350).

In FY 2004, the following activities are planned to support the accelerated cleanup of the Nevada Test Site.

- Complete the development of safety authorization basis documents for all aspects of this project.
- Continue characterization and shipments of transuranic waste to the Waste Isolation Pilot Plant.
- Initiate efforts toward the use of a new technology to lead to the eventual disposition of the Nevada Test Site transuranic waste with no current path forward for disposition.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	0	18	198	216	734	29%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Constructed a Waste Examination Facility to conduct visual examination of legacy transuranic waste (FY 2002).
- Initiate shipments of legacy transuranic waste to the Waste Isolation Pilot Plant (June 2003).
- Continue shipments of legacy transuranic waste to the Waste Isolation Pilot Plant (September 2004).

VL-FOO-0013B-D / Solid Waste Stabilization and Disposition-Oakland Sites-2012 (Defense) (life-cycle estimate $17,106K) 1,157 520 465

This PBS achieves efficiencies through supporting various waste management and environmental restoration activities at multiple site, such as at the environmental restoration Livermore Site, Lawrence Livermore National Laboratory newly generated waste, Lawrence Livermore National Laboratory legacy waste, and Separations Process Research Unit environmental restoration. Rather than each project awarding its own separate contract, economies of scale are achieved by managing waste consolidation, characterization, aggregation, packaging, and transport - especially to commercial facilities. Services for site investigations, hydrogeologic studies, regulatory review, and stakeholder liaisons are also included within this project through wide applicability of these restoration activities to multiple projects/sites.

This project will end when the underlying projects/sites supported by the waste management and environmental restoration activities achieve their end-state, and there is no longer a need for a separate project to achieve multi-project/site savings and efficiencies. End-states will coincide with the EM site closure of the Lawrence Livermore National Laboratory and the Separations Process Research Unit groundwater/soil cleanup. (Former PBS was OK-041)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oakland Sites.

- Technical review of environmental restoration documents/activities.
- Interpretation of Federal and State regulations and policies that affect planned and ongoing remedial actions.
- Support ongoing environmental/safety activities and disposal/pollution prevention activities related to all forms of waste.
- Conduct environmental and engineering evaluations for treatment options for Government wastes and materials.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Transport the packaged waste and materials to the designated facilities.
- Assessment and cleanup tasks involving work plan preparation, site assessments, remedial investigations, feasibility studies, Resource Conservation and Recovery Act closures, environmental analysis, cleanup actions (remedial design/actions), and other technical activities that pertain to environmental support.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- No accomplishments or milestones associated with this PBS

VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory-Site 300 (life-cycle estimate $122,507K) 9,345 10,800 10,485

Past operations at the Lawrence Livermore National Laboratory Site 300 have resulted in the release of hazardous and radioactive materials, primarily from surface spills, leaching from unlined landfills and pits, high explosive test detonations, and previous disposal of waste fluids in lagoons and dry wells.

The Lawrence Livermore National Laboratory Site 300 Remedial Action project remediates contamination from past operations. By conducting cost-effective, science-based, state-of-the-art environmental restoration, the project will control contaminated groundwater migration, and effectively remediate soil and groundwater where contaminants exceed regulatory limits to protect human health, the environment, and beneficial uses of natural resources. This project consists of eight operable units and 73 release sites, 58 of which have been completed to date (September 30, 2002).

The approved remedial actions required by regulatory decision documents can be implemented by the end of FY 2008, thereby reducing the risks, overall liability, and mortgage at Site 300 associated with thirty-seven (37) distinct groundwater plumes contaminated with volatile organic compounds, high explosives, nitrate, perchlorate, tritium, and/or depleted uranium. Build-out of the required remediation network system, scheduled for FY 2008, will address risk reduction associated with groundwater contamination and will complete the EM mission.

The proposed end-state is the transfer of the environmental restoration program at Site 300 from EM to the National Nuclear Security Agency. The project has completed build-out of fourteen (14) treatment systems with ten (10) additional facilities planned in the outyears (thru FY 2008). Remediation will be complete when the selected remedial action for each operable unit has met agreed-upon cleanup standards. (Former PBS was OK-002)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Lawrence Livermore National Laboratory under the Oakland Office.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue the annual surveillance and maintenance for operating 16 treatment systems at multiple on-site locations within the eight operable units.
- One new portable treatment system will be constructed, installed, and operated to address groundwater contamination. This new system, located at Building 832 Canyon Operable Unit will be used to treat contaminants in the proximal area of Building 832 groundwater release site.
- Three regulatory milestones will be met in FY 2004 with the submission of the Pit 7 Complex remedial investigation/feasibility study and Final Remedial Design Reports for Buildings 854 and 850 in Building 854 Operable Unit.
- Continue site-wide regulatory reporting and monitoring.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	3	3	4	65	73	89%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Continuing operation of existing treatment facilities designed to remediate contamination in groundwater and/or soil vapor, reducing any associated risk and preventing offsite plume migration. Began operation of:
  - < Expanding wellfields through the installation of new extraction and/or monitor wells to optimize and expedite cleanup efforts (FY 2002); and
  - < Conducting groundwater and soil vapor monitoring to evaluate the effectiveness of ongoing remediation, track changes in plume concentration and size, and ensure regulatory compliance (FY 2002).
- Construct Building 830 Source Treatment Facility in Building 832 Canyon Operable Unit (February 2003).
- Construct Building 817 Source Groundwater Extraction and Treatment Facility in the High Explosives Process Area Operable Unit (September 2003).
- Construct, install, and operate a portable groundwater extraction and treatment facility in Building 832 Canyon Operable Unit to reduce the contaminants in the proximal area of the plume (September 2004).
- Continue operation and maintenance of 16 operating groundwater treatment systems at the Lawrence Livermore National Laboratory (September 2004).

Total, Defense Site Acceleration Completion, 2012 Accelerated Completions	**2,075,289**	**2,192,088**	**2,228,314**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
ID-INEEL-0011 / NM Stabilization and Disposition	
■ Decrease reflects a reduced level of corrective maintenance required in Chemical Processing Plant-651 and efficiencies achieved in performing semi-annual inventories. The corrective maintenance requirements are reduced as a direct result of accelerated Chemical Processing Plant-651 closure. Decrease also reflects sponsorship by the National Nuclear Security Administration for dispositioning the denitrator project for which it has an identified use.	-1,200
ID-INEEL-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	
■ Decrease reflects completion of transition activities at Test Area North-607 and Chemical Processing Plant-603 basins to deactivation; completion of the Irradiated Fuel Storage Facility heating ventilation, and air conditioning replacement construction project at the Idaho Nuclear Technology and Engineering Center; and a reduction in the spent nuclear fuel storage costs due to consolidation.	-9,796
ID-INEEL-0013 / Solid Waste Stabilization and Disposition	
■ Increase represents the final increment of privatized funding required for the Advanced Mixed Waste Treatment Project Facility and commissioning in preparation for facility operations; the Advanced Mixed Waste Treatment Project in full production; completion of 3,100 m^3 project in FY 2003, transition of facilities to Advance Mixed Waste Treatment Project, remote-handled transuranic waste program, and efficiencies to the Waste Generator Services; and an increase in the environmental monitoring scope.	34,862
ID-INEEL-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	
■ Increase for procurement of evaporator system equipment to reduce volume of tank farm tank liquids; decreases resulting from completion of up-front tank closure activities, streamlining of cleaning and grouting techniques, and completion of sodium bearing waste conceptual designs in support of multiple process options. . . .	-6,715

	FY 2004 vs. FY 2003 ($000)
ID-INEEL-0030B / Soil and Water Remediation-2012	
■ Decrease for completion of the Pit 9 waste retrieval demonstration project; completion of the Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility construction and startup activities; completion of Central Facilities Area mercury pond cleanup activities; for site-wide groundwater investigation activities; an increase for acceleration of Voluntary Consent Order tank characterization and Resource Conservation and Recovery Act closure at Test Area North, Idaho Nuclear Technology and Engineering Center, and Test Reactor Area; an increase for Test Area North plume migration and treatment of organic contamination in the vadose zone at Radioactive Waste Management Complex; an increase for V-tank remediation activities; and an increase for acceleration of Power Burst Facility remediation.	-10,132
ID-INEEL-0040B / Nuclear Facility D&D-2012	
■ Increase for the Power Burst Facility canal deactivations (after fuel removal) in parallel with deactivation of Test Area North-607 basin and Materials Test Reactor canal.	2,454
ID-INEEL-0050B / Non-Nuclear Facility D&D-2012	
■ Increased funding for decontamination and decommissioning of Test Area North-616, Test Area North-602, and Test Area North-609 to support the Idaho National Engineering and Environmental Laboratory early completion initiative. . .	595
OR-0013B / Solid Waste Stabilization and Disposition-2012	
■ Decreased funding reflects the Transuranic Waste Treatment Facility transitioning from the construction phase to operations and a reduction in landlord costs at the East Tennessee Technology Park.	-26,018
OR-0031 / Soil and Water Remediation-Offsites	
■ Reduction reflects completion of Atomic City Auto Parts site in FY 2003.	-469
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	
■ Increase in funding is to complete the Centrifuge Facilities Equipment Removal in Building K-25 and K-27 and to initiate centrifuge equipment removal from other facilities to support closure of the East Tennessee Technology Park by FY 2008. . . .	1,080
RL-0011 / NM Stabilization and Disposition-PFP	
■ Increased funding supports accelerated cleanup progress on legacy plutonium holdup removal in the 234-5Z building; deactivation of the 232-Z facility; and glove box, process vacuum, and ventilation ducting cleanout and removal activities in the 234-5Z building.	20,490
RL-0012 / SNF Stabilization and Disposition	
■ The reduction reflects a planned ramp down of construction work scope as the activities near completion.	-12,117

	FY 2004 vs. FY 2003 ($000)
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	
■ Increased funding supports acceleration of waste site remediation at 100 K Area and 100 B/C Area; additional waste site remedial action activities started in 100 H Area; increased transportation and disposal of mixed low level waste activities related to the remediation in the 100 and 300 Areas; and increased treatment at the Environmental Restoration Disposal Facility for unique waste characteristics.	22,419
SR-0011B / NM Stabilization and Disposition-2012	
■ No significant change.	-204
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	
■ Increased funding supports significant acceleration (i.e., 20 years) of legacy transuranic waste (particularly high activity waste drums) characterization, certification and shipment to the Waste Isolation Pilot Plant.	13,302
VL-PX-0030 / Soil and Water Remediation-Pantex	
■ Funding increase will allow accelerated completion of the Burning Grounds Soil Vapor Extraction interim corrective measure; accelerated evaluation and testing of in-situ chemical destruction and bioremediation techniques to assist pump and treat systems for cleanup of the perched aquifer; and enable soil and ground water characterization activities to proceed with concurrent implementation of interim corrective measures, thereby allowing cleanup design to be completed by FY 2005 before move stringent state cleanup regulations become affective.	3,174
VL-PX-0040 / Nuclear Facility D&D-Pantex	
■ Increased funding allows completion of Zone 10 Ruins decontamination and decommissioning and initiation of actions from the demolition of Building 12-24 Complex to support performance management plan milestone for the completion of decontamination and decommissioning activities by September 2007.	2,641
VL-NV-0013 / Solid Waste Stabilization and Disposition-Nevada Test Site	
■ Increased funding is due to escalation and to characterization, certification, and package-handling labor associated with shipment of larger volumes of transuranic waste to the Waste Isolation Pilot Plant.	2,230
VL-FOO-0013B-D / Solid Waste and Disposition-Oakland Sites-2012 (Defense)	
■ No significant change.	-55
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory-Site 300	
■ No significant change.	-315
Total Funding Change, Defense Site Acceleration Completion, 2012 Accelerated Completions	**36,226**

2035 Accelerated Completions

Mission Supporting Goals and Measures

The Defense Site Acceleration, 2035 Accelerated Completions account provides funding for completing cleanup and closing down facilities contaminated as a result of nuclear weapons production. This account provides funding for site closures and site specific cleanup and closure projects that are expected to be completed after 2012. Environmental Management has established a goal of completing cleanup at all its sites by 2035.

Subprogram Goals

Accelerating risk reduction and cleanup is the central focus of the EM program. Funding in this account is focused on completing risk reduction and cleanup activities expected to be completed after 2012. Environmental Management's goal is to complete cleanup activities at all its sites by 2035.

Since submittal of the FY 2003 Congressional Budget, EM has made substantial progress towards defining the accelerating risk reduction and cleanup strategies at each of its sites. Letters of Intent have been signed with many of our state and Environmental Protection Agency regulatory authorities. These Letters of Intent lay the foundation to move forward with the implementation of EM's accelerated risk reduction and cleanup strategies. Using the Letters of Intent as a basis, Performance Management Plans were then developed. These Performance Management Plans articulate the strategies, key milestones, and commitments that demonstrate sites are accelerating risk reduction and cleanup. From the Performance Management Plans, resource loaded project baselines will be developed that EM will use to manage and track risk reduction and real cleanup progress at its sites. These baselines are expected to be completed during FY 2003.

Performance Indicators

Performance measurement is integral to the success of the EM program in achieving its accelerated risk reduction and cleanup goals. Performance measurement of the EM program consists of "corporate" measures that provide a comprehensive programmatic perspective on progress as well as site and project-specific milestones which are used to demonstrate whether a project and site are on track to achieve its agreed to expectations and schedule. In October 2002, the Assistant Secretary for Environmental Management established a new set of corporate performance measures for the program. The corporate measures are quantitative and focus on the completion of sites, the interim steps necessary to complete sites, and the accomplishment of risk-reduction activities. These new measures, which are under strict EM Headquarters change control, will enable EM to comprehensively track progress against its accelerated risk reduction and closure objectives. In addition, these corporate measures are tracked in the context of the life-cycle total necessary to complete each site as well as the EM program as a whole.

Environmental Management is currently in the process of establishing site resource-loaded baselines which are expected to be completed during FY 2003. The establishment of these site baselines will enable the program to more meaningfully monitor and evaluate actual performance against the new accelerated baselines. Environmental Management believes significant strides have been made in its ability to monitor and demonstrate performance through the establishment of new corporate measures, implementation of a strict configuration management system, and the expected completion of new accelerated site baselines in FY 2003. Environmental Management acknowledges that the program needs to continue to improve upon the progress made to date to further develop project management techniques and associated cost and schedule performance measures. This will enable EM to demonstrate more clearly performance in meeting the program goals of accelerated risk reduction and site cleanup, thereby reducing life-cycle costs.

The EM corporate performance measures are:

- Number of Containers of Plutonium Metal/Oxide Stabilized and Packaged for Long-Term Storage;
- Kilograms of Enriched Uranium Stabilized and Packaged for Long-Term Storage;
- Number of Material Access Areas Eliminated;
- Kilograms Bulk of Plutonium Residues Stabilized, Packaged and Disposed;
- Cubic Meters of Transuranic Waste Stabilized, Packaged and Disposed;
- Kilograms of Depleted Uranium Packaged and Disposed;
- Metric Tons of Spent Nuclear Fuel Packaged for Disposal;
- Canisters of High-Level Waste Processed, Packaged, and Disposed;
- Gallons of Liquid Waste Stabilized and Disposed;
- Number of Liquid Waste Tanks Closed;
- Number of EM Geographic Sites Eliminated;
- Cubic Meters of Low-Level/Low-Level Mixed Waste Packaged and Disposed;
- Number of Nuclear Buildings/Facilities Deactivated, Decommissioned, Demolished, or Transferred;
- Number of Radioactive Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred;
- Number of Industrial Buildings/Facilities Deactivated, Decommissioned, Dismantled, or Transferred; and
- Number of Release Sites Evaluated, Remediated, and Closed Out.

The corporate measures will be complemented by project-specific measures consistent with the site Performance Management Plans and Letters of Intent. Those project-specific measures are typically milestones that signify that project and site progress is sufficient to meet established schedules. Detailed performance measure and milestone information can be found in the site details that follow this program overview.

Annual Performance Results and Targets [a]

	FY 2002 Actuals	FY 2003 Estimate	FY 2004 Estimate
2035 Accelerated Completions			
Liquid Waste in Inventory Eliminated - thousands of gallons	0	700	1,300
Liquid Waste Tanks Closed - Number of Tanks	0	0	8
High-Level Waste Packaged for Final Disposition - Number of Containers	160	130	250
Transuranic Waste Shipped for Disposal at WIPP (m^3)	154	918	1,040
Low-Level and Mixed Low-Level Waste Disposed (m^3)	89,040	16,549	15,392
Nuclear Facility Completions - Number of Facilities	0	0	4
Radioactive Facility Completions - Number of Facilities	3	0	6
Industrial Facility Completions - Number of Facilities	18	23	29
Remediation Complete - Number of Release Sites	61	72	72

Funding by Site

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Carlsbad Field Office					
Waste Isolation Pilot Plant	186,872	183,284	188,235	4,951	2.7%
Oak Ridge Operations Office					
Oak Ridge National Laboratory	31,387	45,075	41,772	-3,303	-7.3%
Y-12 Plant	55,298	22,888	46,689	23,801	104.0%
Total, Oak Ridge Operations Office	86,685	67,963	88,461	20,498	30.2%
Richland Operations Office					
Hanford Site	222,831	277,003	332,224	55,221	19.9%
Office of River Protection					
River Protection	358,484	436,858	389,316	-47,542	-10.9%
Savannah River Operations Office					
Savannah River Site	652,038	763,798	825,524	61,726	8.1%

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

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Various Locations					
Los Alamos National Laboratory	49,104	69,787	72,827	3,040	4.4%
Nevada Offsites	5,770	6,603	8,565	1,962	29.7%
Nevada Operations Office	4,454	5,967	5,438	-529	-8.9%
Nevada Test Site	60,188	68,482	62,442	-6,040	-8.8%
Separations Process Research Unit	1,205	4,329	5,565	1,236	28.6%
Total, Various Locations	120,721	155,168	154,837	-331	-0.2%
Total, Defense Site Acceleration Completion, 2035 Accelerated Completions	1,627,631	1,884,074	1,978,597	94,523	5.0%

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
CB-0080 / Operate Waste Disposal Facility-WIPP	143,350	147,660	142,988	-4,672	-3.2%
CB-0090 / Transportation-WIPP	43,522	35,624	45,247	9,623	27.0%
OR-0041/ Nuclear Facility D&D-Y-12	55,298	22,888	46,689	23,801	104.0%
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	31,387	45,075	41,772	-3,303	-7.3%
RL-0013 / Solid Waste Stabilization and Disposition-200 Area	92,597	137,543	156,486	18,943	13.8%
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone	29,489	40,136	47,312	7,176	17.9%
RL-0040 / Nuclear Facility D&D-Remainder of Hanford	93,633	89,695	118,898	29,203	32.6%
RL-0080 / Operate Waste Disposal Facility	7,112	9,629	9,528	-101	-1.0%
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	358,484	436,858	389,316	-47,542	-10.9%
SR-0011C / NM Stabilization and Disposition-2035	42,698	48,965	74,472	25,507	52.1%
SR-0012 / SNF Stabilization and Disposition	21,468	28,251	34,702	6,451	22.8%
SR-0013 / Solid Waste Stabilization and Disposition	76,122	78,430	86,462	8,032	10.2%
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	392,702	480,211	528,981	48,770	10.2%
SR-0030 / Soil and Water Remediation	98,332	109,000	70,369	-38,631	-35.4%
SR-0040 / Nuclear Facility D&D	20,716	18,941	30,538	11,597	61.2%
VL-LANL-0030 / Soil and Water Remediation-LANL	49,104	69,787	72,827	3,040	4.4%
VL-NV-0030 / Soil and Water Remediation-Nevada Test Site and Offsites	65,958	75,085	71,007	-4,078	-5.4%

	(dollars in thousands)				
	FY 2002	FY 2003	FY 2004	$ Change	% Change
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	4,454	5,967	5,438	-529	-8.9%
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	1,205	4,329	5,565	1,236	28.6%
Total, Defense Site Acceleration Completion, 2035 Accelerated Completions	1,627,631	1,884,074	1,978,597	94,523	5.0%

Detailed Program Justification

(dollars in thousands)		
FY 2002	FY 2003	FY 2004

CB-0080 / Operate Waste Disposal Facility-WIPP (life-cycle estimate $7,281,215K) 143,350 147,660 142,988

This PBS supports all activities related to disposal of transuranic waste at the Waste Isolation Pilot Plant. Defense-generated transuranic waste is currently stored at 27 sites across the country. The transuranic waste from all of the generator sites must ultimately come to the Waste Isolation Pilot Plant for receipt, handling and disposal. The Carlsbad Field Office has the responsibility for management of the National Transuranic Waste Program, whose mission is the implementation and management of a national system that safely and cost-effectively provides for the disposal of this waste. Key elements of this system are: 1) operation of the Waste Isolation Pilot Plant facility--including mining, waste handling, and the infrastructure to safely maintain the disposal facility and operations in compliance with all federal and state laws, regulations, and environmental requirements; 2) Environmental Compliance--maintenance of compliance certification through monitoring and verifying the performance of the system's sensitive parameters, and pursuit of regulatory changes to reduce requirements that are redundant or unnecessary; and 3) National Transuranic Program Management--integration and infrastructure activities required to certify the transuranic waste and coordinate all activities across the transuranic waste complex for shipments of waste to the Waste Isolation Pilot Plant.

End-States: All legacy waste across the DOE complex will be disposed of by 2015. Receipt of newly generated waste will continue until 2030. Decommissioning of the surface facilities and permanent closure of the underground will be complete in 2035. The surface area will remain under institutional controls for 100 years after the disposal phase ends. (Former PBSs were CBFO-1, CBFO-2, and CBFO-4)

In FY 2004, the following activities are planned to support the accelerated cleanup of legacy transuranic waste.

- Develop improvements to eliminate barriers that impede efficiencies and continue to propose permit modifications to the regulators to achieve these efficiencies. These regulatory changes will increase the volume of waste at the sites that meet the Waste Isolation Pilot Plant disposal criteria, streamline the characterization system, and make it possible for the sites to increase their shipping volumes.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue use of mobile/modular systems to provide a standardized, cost-effective capability for transuranic waste characterization, confirmation, and certification in accordance with programmatic compliance documents.
  - < The systems are deployed to small quantity sites that have either limited or no transuranic waste characterization and certification capability and this is currently being studied to determine to which sites this applies. Deployment of mobile systems to small quantity sites to characterize waste will facilitate accelerated removal of transuranic waste from the small quantity sites, effectively lowering the overall risk to a large population located in the communities that surround these sites.
  - < Mobile systems units will also be used to supplement the waste characterization capabilities of the large quantity sites, such as the Savannah River Site, the Los Alamos National Laboratory, and Hanford.
- Submit the compliance recertification application to the Environmental Protection Agency.
- Complete closure of Panel 1, fill Panel 2, and begin Waste Emplacement in Panel 3.
- Normal, ongoing operational activities at the Waste Isolation Pilot Plant site, such as mining and waste handling, will increase to support accelerated shipping activities and preparation for receipt of remote-handled waste.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Disposed of 5,137 m^3 of transuranic waste, 9 percent above planned goal (FY 2002).
- Established transuranic waste disposal capability to support disposal of 63 TRUPACT-IIs per week. (FY 2002).
- Accelerated disposal of waste from Rocky Flats to 469 shipments (FY 2002).
- Deployed mobile characterization process line to the Savannah River Site (FY 2002).
- Received first shipment of waste processed through the mobile process line at the Savannah River Site (FY 2002).
- Increase the Waste Isolation Pilot Plant capability to receive 100 TRUPACT-II's and/or HALFPacts per week (April 2003).
- Ship transuranic waste from the Nevada Test Site to the Waste Isolation Pilot Plant (May 2003).
- Complete characterization and certification of all legacy debris waste at the Argonne National Laboratory-East (May 2003).
- Ship transuranic waste from the Argonne National Laboratory-East to the Waste Isolation Pilot Plant (June 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Submit Compliance Recertification Application to the Environmental Protection Agency (November 2003).
- Complete hot cell facility modifications to support remote-handled program (January 2004).
- Begin waste emplacement in Panel 3 (July 2004).
- Complete Panel 1 Closure (August 2004).

CB-0090 / Transportation-WIPP (life-cycle estimate $1,306,130K) 43,522 35,624 45,247

This PBS includes all transportation activities required to support the disposal of both contact-handled and remote-handled transuranic waste at the Waste Isolation Pilot Plant, including carrier services, transportation packaging, shipping coordination, and stakeholder interfaces related to transportation. As required in the Waste Isolation Pilot Plant Land Withdrawal Act, provides for technical assistance for the purpose of training public safety officials, and other emergency responders as described in part 1910.120 of title 29, CFR, in any State or Indian tribe through whose jurisdiction the Secretary plans to transport transuranic waste to or from the Waste Isolation Pilot Plant.

End-States: All shipping activities are scheduled to end in 2030. (Former PBS was CBFO-3)

In FY 2004, the following activities are planned to support the accelerated cleanup of legacy transuranic waste.

- Carrier capability will increase support from 25 to 34 shipments of transuranic waste per week. Receipt of the final TRUPACT-II shipping containers will contribute to this capability.
- A mobile Non-Destructive Assay/Non-Destructive Evaluation system for large waste boxes will be developed to enable sites to assay or examine large containers without having to reduce the size and repackage the contents of the large containers.
- Fabrication of remote-handled 72-B shipping containers will be completed in FY 2003, and a mobile loading unit will be deployed to the generator sites (Hanford, Oak Ridge) in FY 2004. Trailers will be procured in FY 2004 for initiation of remote-handled waste shipments from the generator sites in FY 2005.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Increased TRUPACT-II fleet size from 36 to 67 to support accelerated cleanup activities (FY 2002).
- Developed strategies for hiring and training drivers to meet accelerated shipping demand (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Negotiated agreements for transportation of the Battelle Columbus Laboratory and the Energy Technology Engineering Center waste to Hanford (FY 2002).
- Conducted two emergency preparedness and emergency response exercises with State and local participation to train emergency responders along the Waste Isolation Pilot Plant shipment routes (FY 2002).
- Complete Battelle Columbus Laboratories shipments to Hanford (September 2003).
- Procure 11 remote-handled trailers for a total of 14 (October 2003).
- Complete TRUPACT-II fabrication to obtain fleet of 84 TRUPACTs (December 2003).
- Increase carrier capability from 25 to 34 shipments per week (December 2003).

OR-0041 / Nuclear Facility D&D-Y-12 (life-cycle estimate $887,297K) 55,298 22,888 46,689

This PBS scope reduces risk by accelerating the cleanup at the Y-12 National Security Complex as committed to in the Oak Ridge Performance Management Plan; designs, builds, operates, and closes the on-site Environmental Management Waste Management Facility; and performs surveillance and maintenance of surplus facilities at the Y-12 National Security Complex.

The Y-12 National Security Complex, like the rest of the Oak Ridge Reservation, is located in a water-rich environment. Each area of the reservation drains into one of the tributaries of the Clinch River/Watts Bar reservoir system, making surface water the dominant media for contaminant transport. Y-12 is a significant contributor of mercury, radionuclides, and volatile organic compound contamination to Upper East Fork Poplar Creek, which flows through the City of Oak Ridge. In addition, Bear Creek Valley, which is located just west of the Y-12 plant, is the site of numerous liquid and solid waste disposal areas. As a result, several high risk reduction projects are planned for completion by 2008. These include construction and operation of a water treatment system to remediate mercury contamination in surface water, remediation of the East End Volatile Organic Compound Plume to prevent further migration off-site, and excavation of the Boneyard/Burnyard burial ground to reduce the flux of uranium contamination into surface water. After completion of these high risk reduction activities, remaining cleanup activities at Y-12, including facility deactivation and decommissioning and soil/sediment removal, will be completed. Surveillance and maintenance activities for the Y-12 National Security Complex will be ongoing as part of this project, which also includes coordination of environmental monitoring throughout the Oak Ridge Reservation to assess the effectiveness of cleanup actions.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Finally, this scope also includes modular design, construction, and operation of the Environmental Management Waste Management Facility. The Environmental Management Waste Management Facility was constructed for the disposal of cleanup wastes, and is essential to the accelerated cleanup of the Oak Ridge Reservation. The Environmental Management Waste Management Facility will receive approximately 2.2 million cubic yards of waste for disposal from Oak Ridge Reservation cleanup projects. The modular design allows incremental expansions to the cell capacity. Annual payments of $1M will be paid over a period of 14 years to the State of Tennessee starting in Calendar Year 2000 to provide funds for the perpetual care of the Environmental Management Waste Management Facility after final closure.

All cleanup actions at Y-12 will be completed by 2015, allowing for the continued use of the site as an industrial facility. (Prior PBSs were OR-171, OR-174, OR-221, OR-241, and OR-EF-10)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Office.

- Operate the Environmental Management Waste Management Facility at an increased rate to dispose of cleanup waste from the Oak Ridge cleanup. Wastes to be disposed in 2004 will exceed the 2003 disposal volume.
- Complete the design and begin construction of the Environmental Management Waste Management Facility modular expansion, which is needed to accommodate accelerated cleanup wastes.
- Complete the construction and begin operations of Building 9201-2 Water Treatment System to reduce the release of mercury to Upper East Fork Poplar Creek.
- Continue work on the East End Volatile Organic Compound plume to prevent further contaminant migration off-site.
- Perform surveillance and maintenance activities on contaminated sites and facilities to maintain safe conditions.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Industrial Facility Completions (Number of Facilities)	0	0	3	4	6	67%
Remediation Complete (Number of Release Sites)	1	3	0	28	138	20%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed the Environmental Management Waste Management Facility Phase 1 construction providing a capacity of 400,000 cubic yards and disposed of over 96,000 tons of waste (FY 2002).
- Complete Boneyard/Burnyard remediation, which will eliminate a signification source of uranium contamination into surface water (September 2003).
- Complete construction of the 9201-2 Water Treatment System to remediate mercury contamination in surface water (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory (life-cycle estimate $606,123K) 31,387 45,075 41,772

Due to the many multi-disciplinary research activities conducted over the past 57 years at the Oak Ridge National Laboratory environmental media and facilities became contaminated as a result of operations, leaks, spills, and past waste disposal practices. The presence of creeks and shallow groundwater provides a ready transport mechanism of contaminants into White Oak Creek, which flows to the Clinch River, a major drinking water source and recreational area.

Areas requiring remediation include more than 50 inactive facilities (including six inactive research reactors), three former solid waste burial grounds, three significant plumes of contaminated groundwater, contaminated surface water, and numerous areas of soil and sediment contamination. Several projects have already reduced environmental risk at the site, including clean-out and stabilization of the eight large Gunite Tanks and numerous smaller inactive liquid low-level waste tanks throughout the laboratory and demolition of the former Metal Recovery Facility. The strategy for continued remediation under this project is to complete remaining high risk reduction activities by 2008 as committed to in the Oak Ridge Performance Management Plan. These projects include remediation of the source of the most significant groundwater contaminant plume at Oak Ridge National Laboratory (i.e., the Core Hole 8 plume), excavation of highly contaminated sediments from surface impoundments located adjacent to White Oak Creek, and decontamination and decommissioning of high-priority facilities to ensure worker safety and mitigate the potential for contaminant release. In addition, the Molten Salt Reactor Experiment facility will undergo removal of the fuel and flush salts, which is an important and challenging activity required for eventual demolition of the facility. Cleanup of all remaining contaminated areas at the Oak Ridge National Laboratory will be completed by 2015, including the decontamination and decommissioning of remaining inactive facilities, capping of buried waste areas, bioremediation of groundwater contamination, and soil/sediment removal.

This project also includes surveillance and maintenance activities to maintain contaminated sites and facilities in a safe and compliant state prior to cleanup to ensure protectiveness following cleanup, and to perform monitoring to assess the effective cleanup actions at the Oak Ridge National Laboratory. Upon completion of this project, the Oak Ridge National Laboratory will continue its mission as a premier national science laboratory. (Former PBSs were OR-321, OR-331, OR-341, and OR-EF-02)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Oak Ridge Office.

- Establish design criteria for demolition of the Krypton-85 Enrichment Facility (Building 3026 C) and the Metal Segmenting Facility (Building 3026 D) to eliminate a safety hazard to workers and a potential for release of contaminants to the environment.
- Complete an engineering evaluation/cost analysis for remediation of the inactive tank and contaminated soils that are the source of the Core Hole 8 groundwater plume.
- Complete Molten Salt Reactor Experiment flush salt removal from flush tank and fuel salt from Fuel Drain Tank Number 2, which is a necessary step in eliminating the safety issues and preparing the facility for decontamination and decommissioning.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Perform surveillance and maintenance to maintain safe conditions.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	16	0%
Radioactive Facility Completions (Number of Facilities)	3	0	1	4	29	14%
Industrial Facility Completions (Number of Facilities)	5	0	0	7	16	44%
Remediation Complete (Number of Release Sites)	28	2	0	80	164	49%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed retrieval and treatment of 3,550 cubic yards of sediments from surface impoundments located adjacent to White Oak Creek (FY 2002).
- Signed the Record of Decision for Interim Actions in Bethel Valley, which established the remedial actions needed throughout Oak Ridge National Laboratory (FY 2002).
- Submitted the Bethel Valley Groundwater Engineering Study Work Plan for regulatory agency approval to support the engineering evaluation/cost analysis to be completed on the Core Hole 8 plume source (FY 2002).
- Performed fuel salt equipment checkout, start-up testing, and initial training at the Molten Salt Reactor Experiment (FY 2002).
- Completed non-destructive analysis measurements of Building 3019B Laboratory off-gas ductwork confirming no potential for a critical nuclear reaction (FY 2002).
- Perform surveillance and maintenance on various surplus and inactive facilities (FY 2002; September 2003 and September 2004).
- Complete removal, treatment, and disposition of surface impoundment sediments (September 2003).
- Complete Molten Salt Reactor Experiment flush salt removal, and complete fuel salt removal from the first of two drain tanks (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

RL-0013 /Solid Waste Stabilization and Disposition-200 Area (life-cycle estimate $7,177,165K) 92,597 137,543 156,486

Hanford has in excess of 40,000 containers of legacy (previously generated) "suspect" transuranic waste temporarily stored awaiting retrieval and permanent disposal. “Suspect” waste is defined as the retrievably-stored transuranic waste in the low-level burial ground, which was originally designated as transuranic waste but may not meet the current definition of transuranic waste. During cleanup, more solid and liquid wastes will be generated and will need to be characterized, possibly treated, and disposed.

The scope of this PBS is linked to a strategic initiative, i.e., accelerated waste disposal, under the Performance Management Plan for the Accelerated Cleanup of Hanford Site. It will accelerate mixed low-level waste treatment and disposal, accelerate the retrieval of suspect transuranic waste from the temporary storage in burial grounds, and accelerate the disposal of transuranic waste to the Waste Isolation Pilot Plant in New Mexico. (Former PBSs were RL-CP01, RL-CP02, RL-CP03, RL-RS01, RL-SC01, RL-SS01, RL-SS02, RL-SS03, and RL-SS04) This PBS provides for the following activities:

- Low-Level Waste: This PBS provides for retrieval, storage, and disposal of low-level waste. Current forecasted life-cycle low-level waste volumes are approximately 98,000 m^3. Since 1998, Hanford has disposed of approximately 31,600 m^3 of low-level waste. By 2035, all low-level waste disposal sites will have a temporary cap.
- Mixed Low-Level Waste: Hanford has large quantities of mixed low-level waste temporarily stored above-ground awaiting permanent disposal. Hanford cleanup activities will generate more mixed low-level waste which will need to be characterized, possibly treated, and disposed. Current forecasted life-cycle mixed low-level waste volumes are approximately 55,000 m^3. Since 1998, Hanford has disposed of approximately 1,200 m^3 of mixed low-level waste. Near-term performance incentive milestones include treatment and/or disposal of 7,000 m^3 of stored mixed low-level waste by September 30, 2006. By 2035, all mixed low-level waste disposal sites will have a temporary cover.
- Transuranic Waste: Hanford has large quantities of legacy (previously generated) suspect transuranic waste awaiting retrieval and processing for disposal at the Waste Isolation Pilot Plant. Current forecasted life-cycle transuranic waste volumes are approximately 28,000 m^3. So far, Hanford has shipped approximately 100 m^3 of transuranic waste to the Waste Isolation Pilot Plant. By 2035, all retrieved transuranic waste will be shipped to the Waste Isolation Pilot Plant. Near-term performance incentive milestones include shipment of 2,000 m^3 of transuranic waste and disposition of 15,000 drums of buried suspect transuranic waste by September 30, 2006.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- < Liquid Waste: This project provides for treatment and disposal of liquid waste from the 242-A Evaporator, Liquid Effluent Retention Facility, Effluent Treatment Facility, the 200 and 300 Area Treated Effluent Disposal Facility, as well as the surveillance and maintenance of the 340 Facility. So far, the 242-A Evaporator has been evaporating approximately 1 million gallons of high-level waste per year at the request of the Office of River Protection to reduce liquid waste volumes in the tank farms. By 2035, all liquid waste treatment will be terminated and stored waste will be dispositioned; all facilities will be closed (demolition of facilities will be addressed in PBS RL-0040, Nuclear Facility D&D-Remainder of Hanford) or transferred to other DOE programs.
- < Cesium and Strontium Capsules: Hanford's 1,936 cesium and strontium capsules contain about 130 million curies of radioactivity which is approximately 37 percent of the site's total radioactivity. This project provides interim storage of cesium and strontium capsules at the Waste Encapsulation and Storage Facility, i.e., water-cooled pool cells, followed by transfer of the capsules to a secure long-term dry storage facility by 2007. This project will reach its end-state when all capsules are transferred to dry storage and the Waste Encapsulation and Storage Facility is deactivated.
- < T Plant and 2706-T Facility: Provide decontamination and waste verification. T Plant is being cleared to get ready to receive K-Basin sludge for storage. So far, approximately 16 percent of the Shippingport pressurized water reactor core 2 spent nuclear fuel has been removed from T Plant to the Canister Storage Building for dry storage. The facility may be modified in the future for processing of remote-handled transuranic waste that cannot be processed at the Waste Receiving and Processing Facility for disposal at the Waste Isolation Pilot Plant. By 2035, T Plant will be deactivated, decontaminated, and decommissioned.
- < The storage of the spent nuclear fuel in the Canister Storage Building is included in PBS RL-0012, SNF Stabilization and Disposition (2012 Accelerated Completions). This PBS will fund the storage of spent nuclear fuel and immobilized high-level waste in the Canister Storage Building from FY 2005 through 2009. The Canister Storage Building operation beyond FY 2009 will be funded by PBS HQ-SNF-0012X, SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository (Defense Environmental Services: Non-Closure Environmental Activities).
- < The operation of the Environmental Restoration Disposal Facility is included in PBS RL-0041, Nuclear Facility D&D-River Corridor Closure Project (2012 Accelerated Completions). This PBS will fund the operation of the Environmental Remediation Disposal Facility after 2012.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Richland Office.

- Low-Level Waste: Dispose of approximately 2,476 m^3 of on-site generated low-level waste.
- Mixed Low-Level Waste: Maintain treatment momentum at 2,000 m^3 and disposal of 2,172 m^3 which would account for approximately 30 percent of the existing mixed low-level waste inventory. Provide interim storage of mixed low-level waste.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Transuranic Waste: Increase transuranic waste shipments to the Waste Isolation Pilot Plant (from 78 m^3 in FY 2003) to 200 m^3 which would account for 10 percent of the transuranic waste to be disposed of by September 30, 2006. Increase retrieval of transuranic waste from 600 drums in FY 2003 to 3,500 drums which would account for approximately 25 percent of the highest plutonium concentration transuranic waste to be retrieved by September 30, 2006. Provide interim storage of transuranic waste.
- Liquid Effluent: Reduce approximately 1 million gallons of liquids associated with tank wastes at the 242-A Evaporator. Store, treat, and dispose of liquid effluents in the Liquid Effluent Retention Facility, Effluent Treatment Facility, 200 and 300 Area Treated Effluent Disposal Facility. Provide waste disposal services.
- Cesium and Strontium Capsules: Select dry storage location and initiate detailed design for the process and transfer of the cesium and strontium capsules from the Waste Encapsulation and Storage Facility to a dry storage facility. Store all of the cesium and strontium capsules in the Waste Encapsulation and Storage Facility.
- T Plant: Complete preparation at T Plant facility to receive and store canister and fuel sludge from K-Basins.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	18	78	200	377	28,369	1%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	4,200	5,537	4,648	43,033	153,487	28%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Low-Level Waste: Disposed of 2,100 m^3 of on-site and 1,900 m^3 of off-site generated low-level waste (FY 2002).
- Mixed Low-Level Waste: Treated 300 m^3 and disposed of 200 m^3 (FY 2002).
- Transuranic Waste: Sent two shipments of 18 m^3 to the Waste Isolation Pilot Plant (FY 2002).
- Liquid Waste: Processed and disposed of 48 million gallons of industrial wastewater at the 300 Area Treated Effluent Disposal Facility. Processed and disposed of 24 million gallons of regulated radioactive wastewater at the 200 Area Effluent Treatment Facility (FY 2002).
- T Plant: Removed approximately 16 percent of the Shippingport fuel from T Plant and placed in dry storage at the Canister Storage Building (FY 2002).
- Low-Level Waste: Dispose of approximately 3,377 m^3 of on-site generated low-level waste (September 2003).
- Mixed Low-Level Waste: Treat 500 m^3 and dispose of 2,160 m^3 of mixed low-level waste to reduce inventory (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Transuranic Waste: Certify and ship 78 m^3 of transuranic waste, and retrieve at least 600 drums of transuranic waste which would account for 4 percent of the transuranic waste to be retrieved by September 30, 2006. Facilities will be modified to prepare for a significant increase in transuranic waste retrieval, processing, and shipping in FY 2004 (September 2003).
- Liquid Waste: Complete evaporation of 3 million gallons of high-level waste to reduce liquid waste volumes in the tank farms (September 2003).
- Cesium and Strontium Capsules: Begin procurement for dry cask storage facilities (September 2003).
- T Plant: Complete removal of Shippingport fuel and start accepting K-Basin sludge for storage (September 2003).
- Low-Level Waste: Dispose of 2,476 m^3 (September 2004).
- Mixed Low-Level Waste: Dispose of 2,172 m^3 (September 2004).
- Transuranic Waste: Ship 200 m^3 transuranic waste to the Waste Isolation Pilot Plant and retrieve 3,500 drums of transuranic waste (September 2004).

RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone (life-cycle estimate $1,368,192K) 29,489 40,136 47,312

The Hanford site supported national defense programs, largely through the production of nuclear materials. One legacy of Hanford operations is a significant waste inventory of radioactive and regulated chemical materials. Past releases of these materials have contaminated Hanford's facilities and environment. Over 625,000 m^3 of solid waste, containing an estimated 4.8 million curies of radioactive materials, were buried in Hanford site soils, while over 1.7 trillion liters of liquid waste containing radioactive and chemical contamination have been discharged to the ground at Hanford Site. Early disposal practices resulted in contamination above current federal standards at Hanford.

The groundwater/vadose zone under the Hanford Site has been contaminated from past Hanford operations through discharge of radioactive liquid waste to cribs, ditches, trenches, ponds, and from leaky waste tanks. Currently, approximately 220 square kilometers of groundwater exceed drinking water standards and portions of these plumes have reached the Columbia River. This PBS provides for groundwater/vadose zone management, sampling and analysis, monitoring, and remediation activities that address groundwater contamination by carbon tetrachloride, chromium, technetium 99, strontium, and uranium plumes, and protection of the groundwater resources on Hanford Site. Also, included is groundwater surveillance and maintenance activities required prior to site closure.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The objective of this PBS is to complete final active remedial actions for six groundwater plumes by 2012 and to complete the Comprehensive Environmental Response, Compensation, and Liability Act process for five other operable units that have either no remediation action, or natural attenuation, as the final remedial approach. The PBS scope also addresses the vadose zone contamination at 800 waste sites that can potentially result in future groundwater plumes in the central plateau area of the site. Significant characterization, coupled with applied science and technology, are being applied to these legacy issues.

The end-state and exit strategy for the groundwater issues will be fully developed by 2006 and implemented by 2012. Groundwater completion activities will follow waste tank and waste site closure activities through the 2024 time frame. Interim remedial actions are in place. These generally consist of pump and treat facilities that will operate until final Records of Decisions are issued. A total number of approximately 2500 abandoned wells will be decommissioned by 2024. To date only a small number have been decommissioned. At end of FY 2002: 1) A total of 306 kilograms of Chromium and 1.2 curies of Strontium were removed by processing over 13.2 billion liters of groundwater in the 100 Area, and 2) A total of 6,000 kilograms of carbon tetrachloride was removed by processing 2.4 billion liters of groundwater in the 200 Area. (Former PBSs were RL-CP01, RL-CP02, RL-CP03, RL-RS01, RL-SC01, RL-SS01, RL-SS02, RL-SS03, and RL-SS04)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Richland Office.

- Perform groundwater and vadose zone sampling and analysis for 1000+ wells on the Hanford Site.
- Upgrade and operate the groundwater interim action remediation systems in the River Corridor and on the Central Plateau.
- Complete installation of high priority wells in the 200 East Area to gather additional data to support an exit strategy decision by 2006, and begin accelerated decommissioning of high risk wells.
- Field studies and analysis of the vadose zone under the single-shell tanks, adjacent cribs, and specific retention trenches will determine rates and direction of radionuclide migration, which supports groundwater remediation strategy development by 2006.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Performed groundwater and vadose zone sampling and analysis for 1000+ wells on the Hanford Site (FY 2002).
- Processed (pump and treat) 556 million liters of groundwater in 100 Area and removed 41 kilograms of Chromium and 0.14 curies of Strontium; Processed (pump and treat) 252 million liters of groundwater in 200 Area and removed 836 kilograms of Carbon Tetrachloride; processed and removed 432 kilograms of Carbon Tetrachloride through soil vapor extraction system in 200 Area (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Upgraded and operated the groundwater interim action remediation systems in the River Corridor and on the Central Plateau (FY 2002).
- Completed annual monitoring well installations per Tri-Party Agreement milestone M-24-00 (FY 2002)
- Complete final testing and begin full operations of in-situ redox manipulation groundwater treatment system (September 2003).
- Complete annual monitoring well installation per Tri-Party Agreement Milestones M-24-00 (September 2003).
- Complete science and technology study for groundwater remediations for three of the single-shell tank farms (September 2003).
- Perform groundwater and vadose zone sampling and analysis for 1,000 + wells on the Hanford Site (September 2003).
- Upgrade and operate the groundwater interim action remediation system in the River Corridor and on the Central Plateau Areas (September 2003).
- Complete installation of high priority wells in 200 Area to gather additional data to support groundwater remediation strategy development by 2006 (September 2003).
- Perform groundwater and vadose zone sampling and analysis for 1,000 + wells on the Hanford Site (September 2004).
- Upgrade and operate the groundwater interim action remediation system in the River Corridor and on the Central Plateau Areas (September 2004).
- Complete installation of high priority wells in 200 Area to gather additional data to support groundwater remediation strategy development by 2006 (September 2004).

RL-0040 / Nuclear Facility D&D-Remainder of Hanford
(life-cycle estimate $8,682,961K) 93,633 89,695 118,898

The Hanford site supported national defense programs, largely through the production of nuclear materials. One legacy of Hanford operations is a significant waste inventory of radioactive and regulated chemical materials. Past releases of these materials have contaminated Hanford's facilities, ground soils and environment. Over 625,000 m^3 of solid waste, containing an estimated 4.8 million curies of radioactive materials, were buried in Hanford site soils, while more than 1.7 trillion liters of liquid waste containing radioactive and chemical contamination have been discharged to the ground. Early disposal practices resulted in contamination above current federal standards at Hanford.

This PBS scope implements various Hanford Site cleanup initiatives including: Accelerates cleanup of radioactivity and chemical contamination in 860 waste sites, including burial grounds, and 1,076 facilities on the Central Plateau (200 Area), South Hanford Industrial Area, including 400 Area, and remaining 300 Area; Accelerates Cleanup and Protection of Hanford Groundwater; and streamlines Hanford's Infrastructure operation to achieve completion of the Hanford EM mission by 2035.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Life-cycle workscope to accomplish these initiatives includes: 1) Decontamination, decommissioning, dismantlement, and disposition of surplus facilities and remediation of high risk waste sites containing large inventories of mobile contaminants (e.g., carbon tetrachloride, uranium, iodine-129 and technetium-99) that are causing groundwater plumes; 2) Remediation of the canyon facilities, remediation of all 200 Area waste sites and construction of surface barrier caps over waste sites; 3) Remediation of the 618-10 and 618-11 Burial Grounds that contain approximately 50,000 drum-equivalents of remote- and contact-handled transuranic waste; 4) Deactivation and disposition of contaminated equipment; 5) Final disposition of Cold War legacy wastes and DOE facilities remaining at the Pacific Northwest National Laboratory; 6) Sampling of the Hanford environment to protect public health and safety and ecological and cultural resources; 7) Provide minimum safe operations to facilities awaiting to be deactivated and demolished; and 8) Repair infrastructure to remedy failing or failed systems.

The end-state of this PBS (in 2035) will be determined by the completion of the following activities: 1) Facilities demolished and debris buried in the Environmental Restoration Disposal Facility; 2) Canyons buried, or have roof replacements, to be used as above ground radioactive waste disposal for maximum isolation from the environment, and waste sites remediated; 3) Completion of 618-10 and 618-11 remediation by 2018; 4) Contaminated equipment deactivated and disposed; 5) Nuclear Energy Program legacy facilities deactivated and made available for alternative usage; and 6) Cold War legacy wastes disposed and facilities remediated. Remedial investigations of waste sites in the 200 Area have been initiated and will be completed in FY 2008. (Former PBSs were RL-CP01, RL-PED, RL-RC03, RL-RS01, RL-SC01, RL-SS01, RL-SS02, and RL-SS05)

This PBS also funds a subproject that would have been appropriated as a separate line-item project in the past, but is not proposed as a separate control in FY 2004 or the future. The request for design of the A-8 Electrical Substation Upgrade in FY 2004 is $288,000. For more information on this subproject, a Subproject Detail description is included in the Appendix.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Richland Office.

- Complete demolition of 233-S and 233-SA facilities to slab on grade. Eliminate U Plant Area septic system discharges.
- Design and construct a test barrier to demonstrate long-term performance and monitoring capability for selected high risk waste site(s) included in the U-Plant accelerated region closure by September 30, 2006 (16 years early).
- Continue to work on Comprehensive Environmental Response, Compensation, and Reliability Act based remedial investigation/feasibility study for reaching a Record of Decision and initiate follow on design activity for cleanup of waste sites and surplus facilities.
- Continue to work on Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act based remediation design and remediation action work plan for waste sites and excess facilities; safety basis and hazardous classification analysis; and technology development of in-situ transuranic waste detection and testing of excavation for 618-10 and 618-11 burial grounds cleanup.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Operations of 325 Radiochemical Processing Laboratory facility for analytical operations in support of Hanford cleanup activities.
- Transfer the Fitzner/Eberhardt Arid Lands Ecology Reserve to the Department of Interior.
- Remove and dispose of 63.5 m^3 of low-level waste and 1 m^3 of mixed low-level waste resulting from decontamination of 300 Area facilities.
- Replace water lines that support Waste Treatment Plant operations and reduce leakage to groundwater.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	2	2	98	2%
Radioactive Facility Completions (Number of Facilities)	0	0	0	0	342	0%
Industrial Facility Completions (Number of Facilities)	13	2	3	159	636	25%
Remediation Complete (Number of Release Sites)	0	0	0	5	860	1%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Removed all 15 plutonium-contaminated vessels and most of the interior structural steel at the high risk 233-S facility (FY 2002).
- Operated soil and groundwater remediation systems (FY 2002).
- Removed all remaining DOE special case wastes from 300 Area, demolished three facilities (FY 2002).
- Disposed a high risk contaminated induction coupled plasma glove box from 325 Radiochemical Processing Facility (FY 2002).
- Initiate permanent transfer of the majority of the Hanford Reach National Monument land to the Department of Interior (September 2003).
- Complete Radon Holdup System Disposition (September 2003).
- Dispose of 12.3 m^3 of low-level waste, 48 m^3 of mixed low-level waste and 10.5 m^3 of transuranic waste from decontamination of 300 Area Laboratory facilities (September 2003).
- Decontaminate interior of 233-S and 233-SA facilities preparing for demolition in 2004 (September 2003).
- Complete sampling and characterization of 224-T facility (September 2003).
- Remove sodium from 300 Area facilities (September 2003).
- Demolish 233-S and 233-SA facilities (June 2004).
- Dispose 63.5 m3 of low-level waste and 1 m3 of mixed low-level waste from the decontamination of 300 Area facilities (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete transfer of the Fitzner/Eberhardt Arid Lands Ecology Reserve permanently from Department of Energy to the Department of Interior (September 2004).
- Complete disposition for all Hanford non-radioactive sodium (September 2004).

RL-0080 / Operate Waste Disposal Facility (life-cycle estimate $435,929K) 7,112 9,629 9,528

The complex-wide Waste Management Programmatic Environmental Impact Statement designated Hanford as one of the disposal sites for off-site low-level waste and mixed low-level waste. This PBS scope provides on-going operations of the Hanford low-level waste and mixed low-level waste disposal facilities, e.g., burial grounds. Examples of the operations include: surveillances and maintenance, Resource Conservation and Recovery Act inspections, sample analysis, waste acceptance criteria review and update, support to operating assessments/audits, performance assessments/composite analysis, facility permitting, risk assessments, regulatory support, transportation and packaging support to move waste around the burial grounds, etc.

These operations support remediation and other operational mission goals of Hanford and other off-site DOE and Department of Defense generators. It provides significant support for other DOE site closures. These generators include but are not limited to: Rocketdyne, Babcock and Wilcox-Parks Township, University of Missouri, Seattle University, Knolls Atomic Power Laboratory-Tennessee, Fermi National Accelerator Laboratory, Puget Sound Naval Shipyard, Princeton Plasma Physics Laboratory, Brookhaven National Laboratory, Ames Laboratory, Massachusetts Institute of Technology, Paducah Gaseous Diffusion Plant, Knolls Atomic Power Laboratory-Windsor, Pearl Harbor Naval Shipyard, University of California-Davis, Battelle Columbus Laboratory, Idaho National Engineering and Environmental Laboratory, General Atomics, Rocky Flats Plant, National Renewable Energy Laboratory, University of Utah, Lawrence Berkeley Laboratory, Argonne National Laboratory-East, Stanford Linear Accelerator Center. Disposal costs are paid for by generators and are not funded under this PBS.

The end-state of this PBS is completion of shipment of off-site waste to Hanford and cessation of Hanford waste production. PBS RL-0040, Nuclear Facility Decontamination and Decommissioning-Remainder of Hanford, will demolish facilities and close the disposal sites by 2035. By that time each of the disposal sites will have a temporary cover. (Former PBSs were RL-CP02, RL-SS01, and RL-SS02)

In FY 2004, the following activities are planned to support the accelerated cleanup (stabilization and disposition of solid wastes) in the 200-Area of the Hanford Site.

- Provides on-going operations of the Hanford Site solid waste disposal facilities (low-level waste and mixed low-level waste).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Provides on-going operations of the Hanford Site solid waste disposal facilities (low-level waste and mixed low-level waste). Provided significant support for other DOE site closures (FY 2002).
- Provide on-going operations of the Hanford Site solid waste disposal facilities for low-level waste and mixed low-level waste. Disposal are funded by the generators hence the disposal volumes are not tracked under this PBS (September 2003).
- Provide on-going operations of the Hanford Site solid waste disposal facilities for low-level waste and mixed low-level waste. Disposal are funded by the generators hence the disposal volumes are not tracked under this PBS (September 2004).

ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition (life-cycle estimate $38,221,536K) 358,484 436,858 389,316

This PBS includes activities required to stabilize more than 50 million gallons of high-level radioactive waste stored underground in 177 tanks by 2035, including retrieval, treatment, disposal and closure of the facilities. Construction and commissioning of the Waste Treatment and Immobilization Plant, which will treat the tank waste to meet regulatory disposal requirements, is included in PBS ORP-0060, Major Construction-Waste Treatment Plant.

The radioactive waste stored in the Hanford tanks was produced as part of the nation's defense program and has been accumulating since 1944. The tanks are old; sixty-seven tanks are believed to have leaked a total of about one million gallons of waste into the soil. Continued leakage could threaten the Columbia River, located between 7 and 10 miles away. In order to protect the river, the waste must be removed and processed to a form suitable for disposal, and the tanks stabilized. The processed waste will be disposed in the geologic repository when available, and lower hazard waste forms will be deposited in approved buried waste facilities on the Hanford site. The tanks, ancillary equipment below grade, and any residual waste that cannot be retrieved will be stabilized in place. Above ground facilities will be removed. Appropriate caps and barriers will be used to remediate the contaminated soil surrounding the tanks as required. The area surrounding the remediated tank farms is planned for industrial use.

Specific activities in the scope of this PBS include:

- < Design, construction, and operation of tank waste retrieval and transfer systems to transport the waste from the tanks for stabilization in either the Waste Treatment Plant or supplemental/alternative treatment facilities beginning in 2007 (hot commissioning) and ending in 2028.
- < Operation of treatment facilities to complete the tank waste program by 2035.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Closure of 149 single-shell tanks, 28 double-shell tanks, tank farms, and facilities including completing necessary cleanup actions on tanks, ancillary equipment, contaminated soils, treatment facilities, the immobilized high-level waste storage facilities and on-site immobilized low-activity waste disposal facilities. Closure of high-level tanks will begin in 2004 when six tanks will be closed, and continue until all tank waste is stabilized in 2028. Closure of remaining facilities will be completed by 2035.
- Construction and operation of immobilized high-level waste canister storage facilities prior to shipment to a geologic repository beginning in 2012.
- Disposal of immobilized low-activity waste containers at the Hanford Site beginning in 2007 and continuing until all tank waste is stabilized in 2028.
- Packaging of tank waste that is determined to be contact- or remote-handled transuranic waste, and shipment of that waste to the Waste Isolation Pilot Plant for final disposition.
- Adequate radiological, nuclear, and process safety for the Waste Treatment and Immobilization Plant through authorization of regulatory actions and execution of a comprehensive inspection program.
- Maintenance of the tank farms in a safe and compliant manner until the waste is retrieved for processing and the tank farms are closed. To date, retrieval system design and construction to support waste feed delivery to the Waste Treatment and Immobilization Plant have been initiated, development of additional single-shell tank retrieval technology demonstrations are ongoing, an accelerated National Environmental Policy Act process for closure of tanks and the use of supplemental treatment technologies has begun, and the tank closure plan for modification of the Hanford Site Resource Conservation and Recovery Act Part B permit has been submitted.

The end-state is achieved by 2035 when the waste in the 177 underground storage tanks is stabilized, and the tank farms, ancillary facilities, the Waste Treatment and Immobilization Plant, and disposal facilities are closed. To achieve this end-state, construction of the retrieval and transfer systems needs to be completed, the tank waste needs to be treated through the Waste Treatment and Immobilization Plant or other supplemental treatment, the low-activity waste needs to be disposed, and all the facilities need to be closed. (Former PBSs were ORP-RG01, ORP-TW03, ORP-TW04, ORP-TW06LT, ORP-TW09, ORP-TW10, and ORP-TW11)

This PBS includes $13,954,000 for continued construction of the Immobilized High-Level Waste Interim Storage Facility, line-item 03-D-403. This PBS also funds two subprojects that were appropriated as separate line-item controls in the past, but are not proposed as separate controls in FY 2004 or the future. One subproject provides for retrieval of high-level waste from the Hanford tank farms. The appropriations for the Initial Tank Retrieval Systems, line-item 94-D-407, were $1,844,000 in FY 2002, and $20,945,000 in FY 2003. The FY 2004 request is $17,000,000. The second subproject upgrades the waste tank farms for continued operation until they have been emptied and closed. The appropriations for the Tank Farm Restoration and Safe Operations, line-item 97-D-402, were $38,473,000 in FY 2002, and $33,300,000 in FY 2003. The FY 2004 request is $31,000,000. For more information on these subprojects, a Subproject Detail description is included in the Appendix.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

In FY 2004, the following activities are planned to support the accelerated cleanup of the River Protection Office.

- Close 6 single-shell tanks, the first tanks closed at the Hanford Site.
- Retrieve waste from additional single-shell tanks and complete construction of 5 single-shell tank retrieval systems in preparation for closure in FY 2005.
- Publish the Final Environmental Impact Statement and Record of Decision for Accelerated Retrieval, Treatment, and Disposal for Tank Waste and Closure of Tanks at the Hanford Site. Make decisions whether to continue with development of supplemental technologies such as steam reforming, containerized grout, and/or bulk vitrification.
- Complete interim stabilization of 29 single-shell tanks in compliance with the Consent Decree.
- Complete construction of AZ-101 retrieval system, the first feed tank to the Waste Treatment and Immobilization Plant.
- Perform approximately 25 double-shell tank to double-shell tank transfers in support of waste feed delivery, single-shell tank retrieval, and evaporator operations.
- Complete construction of AW, AY, AZ, and SY Tank Farm upgrades in support of infrastructure improvements for double shell tank feed delivery to the Waste Treat and Immobilization Plant.
- Complete fabrication and initial testing of transuranic waste and low-level waste packaging equipment.
- Complete detailed design and start construction of the Canister Storage Building modifications to support the interim storage of Immobilized High-Level Waste that will be received from the Waste Treatment and Immobilization Plant. This facility must be available to accept the treated product from the Waste Treatment and Immobilization Plant on schedule to allow the treatment of Hanford's tank waste to continue in support of a 2035 closure of the Hanford Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Liquid Waste in Inventory Eliminated (thousands of gallons)	0	0	0	0	54,000	0%
Liquid Waste tanks Closed (Number of Tanks)	0	0	6	6	177	3%
High-Level Waste Packaged for final Disposition (Number of Containers)	0	0	0	0	11,770	0%
Transuranic Waste Shipped for Disposal at WIPP (m^3)	0	0	0	0	5,500	0%
Low-Level and Mixed Low-Level Disposed (m^3)	0	0	0	0	262,300	0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	18	0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	0	28	0%
Industrial Facility Completions (Number of Facilities)	0	0	0	0	102	0%
Remediation Complete (Number of Release Sites)	0	0	0	5	322	2%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Pumped liquids (2,574,000 gallons) from single-shell tanks until 18 percent of pumpable liquids remained, a Consent Degree requirement (FY 2002).
- Installed over 1.9 miles of waste transfer piping (FY 2002).
- Completed construction of the Cold Test Facility (FY 2002).
- Completed construction of master pump shutdown and waste transfer systems (FY 2002).
- Started design of AN-107 Retrieval System in support of Waste Treatment and Immobilization Plant waste feed delivery (FY 2002).
- Completed design and started construction of AN-101 Double-Shell Tank Retrieval System in support of the Waste Treatment and Immobilization Plant waste feed delivery (FY 2002).
- Started construction on AZ-101 Retrieval System, the first waste feed tank to the Waste Treatment and Immobilization Plant (FY 2002).
- Issue Safety Evaluation for full construction authorization of the Waste Treatment and Immobilization Plant Pretreatment Facility (January 2003).
- Complete conceptual design of steam reforming process for low-activity waste treatment (January 2003) and complete feasibility studies for containerized grout and bulk vitrification (August 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete C-106 tank preparation and equipment installation for retrieval and tank closure (September 2003).
- Complete testing of C-104 retrieval system in the Cold Test Facility needed for verifying the operational capability and feasibility of the system (September 2003).
- Complete initial upgrades in Transfer Lines AY, AZ, AW, and AN needed for waste feed delivery to the Waste Treatment and Immobilization Plant (September 2003).
- Complete and issue for public review the Draft Environmental Impact Statement for retrieval, tank closure, and supplemental technologies (September 2003).
- Pump liquids from single-shell tanks until 2 percent of the pumpable liquid waste remains (September 2003).
- Complete construction of AP Tank Farm Waste Tank and Immobilization Plant transfer line (March 2004).
- Complete design of the modifications to the Canister Storage Building required for storing high- level waste until shipment to a high-level waste repository (April 2004).
- Initiate construction in the Canister Storage Building (June 2004).
- Complete construction of AZ-101 retrieval system for first high-level waste feed delivery to the Waste Treatment and Immobilization Plant (June 2004).
- Complete testing of steam reforming process for low-activity waste treatment for use as a supplemental technology for treating Low Activity Waste (June 2004).
- Complete interim stabilization of single-shell tanks which completes pumping all pumpable liquids from single-shell tanks (September 2004).
- Close six single-shell tanks (September 2004).

SR-0011C / NM Stabilization and Disposition-2035 (life-cycle estimate $1,459,013K) 42,698 48,965 74,472

At the end of the Cold War, the nuclear materials complex at the Savannah River Site contained a large inventory of nuclear materials in various forms and stored in many locations (raw materials, in-process, finished products, in vaults, reactor basins, etc.) in several facilities. Many of these nuclear materials were never intended to stay in their existing form and location when the national security mission ceased and the materials disposition mission began. These materials disposition activities began with the issuance of the Defense Nuclear Facilities Safety Board Recommendation 94-1 to stabilize “at-risk” nuclear materials, which might pose a significant risk to the safety of the workers, the public, and/or the environment. The Defense Nuclear Facilities Safety Board issued a supplemental recommendation 2000-1 to amplify the concern of the current Savannah River Site Program Performance Management Plan is intended to accelerate removal of the risks posed by these materials.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The PBS scope is to operate K-Area Material Storage and the 235-F facility as storage and surveillance facilities for stabilized materials. It also provides a stabilization and packaging capability (FY 2004 project) in the 235-F facility. The receipt, storage, and disposition of materials at the Savannah River Site allows for the deinventory and shutdown of other DOE complex sites providing substantial complex risk reduction and significant mortgage reduction savings to the Department. These facilities will be operated in compliance with applicable laws, regulations, and DOE Orders such that safety risks are less than the Department's safety goals and worker health and safety is protected. Special nuclear materials will be protected from theft and sabotage and protective capabilities upgraded as appropriate. The special nuclear materials will be managed until final disposition facilities are available.

The K-Area continues to serve as a material storage facility for unirradiated highly enriched uranium, large amounts of tritiated heavy water consolidated from other facilities, and Plutonium being received and stored in the K-Area Material Storage from other DOE complex locations. The vaults in 235-F will operate storing stabilized nuclear materials. A planned DOE STD-3013 surveillance and packaging capability will be operated for required surveillance on storage containers and then repackage the materials and return them to storage. The K Reactor and 235-F process areas will be maintained in a safe and environmentally sound shutdown condition. Plutonium that meets the criteria for disposition via the National Nuclear Security Administration mixed-oxide fuel program may be transferred to the National Nuclear Security Administration and dispositioned by FY 2020. Environmental Management is reviewing options to transfer or disposition the remaining fissile materials that cannot go into the mixed-oxide fuel process.

In compliance with State Department commitments, the K-Area Material Storage facility is being modified to allow implementation of International Atomic Energy Agency control protocols for plutonium oxide. Following completion of required facility upgrades, implementation of International Atomic Energy Agency controls requires: isotopic counting of oxide material in nuclear material counting equipment; application of International Atomic Energy Agency tamper indicating devices; and storage of material in a specially identified International Atomic Energy Agency storage location segregated from the rest of the K-Area Material Storage. The additional operational activities are over and above existing K-Area Material Storage requirements for general materials and require coordination with International Atomic Energy Agency personnel and transfer of information/data.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- Continues activities, for consolidation of nuclear materials aimed at providing expanded storage capability to meet the Department's needs. These two storage facilities are expected to operate in tandem. They will be utilized for receiving materials, performing material surveillance and maintenance, and for shipping materials through the end of the mission when all materials have been dispositioned. Specific activities involved in operating these storage facilities include assuring reliable nuclear material incident monitoring and fire protection capabilities, as well as nuclear material accountability and safe storage.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS (Only covers storage in the K-Area Materials Storage and 235-F.)						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- 235-F Facility - preparations for receipt of Rocky Flats contaminated plutonium and highly enriched uranium items, and shipments of 'Special Items' commenced to Lawrence Livermore National Laboratory (FY 2002).
- Contamination rollbacks were effected in the Old Metallurgical Laboratory, Actinide Billet Line, and the Plutonium Experimental Facility to reduce operating costs and to enhance worker health and safety conditions (FY 2002).
- K-Area Material Storage Facility - initiated the multiyear plutonium receipt program for the Rocky Flats material. One metric ton of oxide material was placed under International Atomic Energy Agency protocols per State Department commitments (FY 2002).
- Initiate shipment of highly enriched uranium ingots off-site (July 2003).
- Complete Critical Decision 0 (approve mission need) For 3013 container surveillance capability in 235-F (September 2003).
- Complete Critical Decision 1 (for 235 F 3013 container project) (September 2003).
- Complete Critical Decision 2 (for 235 F 3013 container project) (September 2004).
- Complete Critical Decision 3 (for 235F 3013 container project) (September 2004).

SR-0012 / SNF Stabilization and Disposition (life-cycle estimate $396,703K) 21,468 28,251 34,702

This PBS covers the scope and funding for the legacy Spent Nuclear Fuel originating from Atomic Energy Commission and DOE activities. (Non-legacy spent nuclear fuel is covered in PBS HQ-SNF-0012X, SNF Stabilization and Disposition-Storage Operations awaiting Geologic Repository.) The end of the Cold war and the end of materials production at the Savannah River Site left a large inventory of (Savannah River Site produced) irradiated spent nuclear fuel and other materials in underwater storage in three spent nuclear fuel storage basins; the K and L production reactor disassembly basins, and the Receiving Basin for Off-site Fuels (current operation of this facility is covered in PBS SR-0011B, NM Stabilization and Disposition - 2012). The condition of some of these legacy fuels were noted in the Defense Nuclear Facility Safety Board Recommendation 94-1 and subsequent recommendation 2000-1 concerning the need to ensure safe storage of the spent nuclear fuel and the need to stabilize the degraded spent fuel.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The scope of this PBS includes programmatic and physical support efforts related to safe storage and preparation for final disposition of Savannah River Site legacy spent nuclear fuel inventories that remain after FY 2004. Various options for disposition are still being evaluated.

The end-state of this project is the safe disposition of all legacy spent nuclear fuel that remains after FY 2004 at the Savannah River Site in accordance with the Performance Management Plan for accelerating cleanup of the Savannah River Site. Activities include receipt of legacy spent nuclear fuel (from Receiving Basin for Off-site Fuel) in L-Disassembly Basin, cask unloading and preparation for underwater storage, cask loading and shipments of the Defense Nuclear Facilities Safety Board 94-1/2000-1 irradiated spent nuclear fuel and miscellaneous non-legacy materials to H-Canyon for stabilization; and surveillance and maintenance of legacy spent nuclear fuel. A basin de-ionization system will be operated in support of fuel storage and water chemistry control requirements. (The scope and funding requirements for the deinventory of Receiving Basin for Off-site Fuel is included in PBS SR-0011B, NM Stabilization and Disposition - 2012.) These activities fully support the accelerated clean up objective of dispositioning spent nuclear fuel under EM cognizance from the previous baseline of 2037 to 2022 (a 15-year schedule improvement). (Former PBSs were SR-SF02, SR-SF06, and SR-SF09)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- Cask shipments of about 249 assemblies of Mk 16/22 spent nuclear fuel will be shipped from L-disassembly basin to H-Canyon for stabilization.
- The final Receiving Basin for Off-site Fuel deinventory shipments will be received in L Basin, permitting the deactivation and shutdown of the Receiving Basin for Off-site Fuel facility. Facility Surveillance and Maintenance activities, including sampling, radiation monitoring and nuclear safety systems maintenance will be performed to ensure compliance with Federal regulations and the facility's authorization basis. Basin operation activities, including continued operation of deionization systems and fuel handling (loading and unloading capability) will be focused on maintaining the accelerated schedule for consolidating the spent nuclear fuel in one Savannah River Site location (L Basin).

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
No metrics associated with this PBS						

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Cask shipments of about 252 assemblies of Mk16/22 spent nuclear fuel and about 297 assemblies of Sterling Forest Oxide fuel were made to H-Canyon for stabilization (FY 2002)
- Cask shipments of about 306 assemblies of Mk16/22 spent nuclear fuel and about 194 assemblies of Sterling Forest Oxide fuel will be made to H-Canyon for stabilization (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Cask shipments of about 249 assemblies of Mk16/22 spent nuclear fuel will be made to H-Canyon for stabilization (March 2004).

SR-0013 / Solid Waste Stabilization and Disposition (life-cycle estimate $3,858,263K) 76,122 78,430 86,462

This PBS scope covers the storage, treatment and disposal functions for transuranic, low-level, mixed low-level, hazardous, and sanitary waste, as well as Pollution Prevention, Waste Minimization, Waste Certification and other waste management support functions. In addition, this project covers surveillance and maintenance activities for the Consolidated Incinerator Facility project, and general "landlord" functions, which are necessary for the general operation of the site, and care of the site's shared infrastructure components and centralized support activities. Procurement and installation of capital equipment / general plant projects, which support landlord facilities and operations, are also covered by this project.

Legacy inventories of low-level waste, mixed low-level waste, and hazardous waste will be eliminated by FY 2006. Drummed transuranic legacy waste will be eliminated by FY 2009, in accordance with the Savannah River Site Program Management Plan Initiative Waste Management-3 / Expedite Transuranic Waste Shipments to the Waste Isolation Pilot Plan. In addition, boxed / bulk transuranic legacy waste will be eliminated by 2013, in accordance with the Savannah River Site Performance Management Plan Initiative Waste Management-4 / Accelerate Risk Reduction through Expedited Management of High-Activity Transuranic Waste. Also, this scope will cover surveillance and maintenance activities for the Consolidated Incinerator Facility, through FY 2009, while working toward decommissioning of the facility at that time. Alternative disposal options for PUREX (i.e., Plutonium - Uranium Extraction) waste are being developed to allow the Consolidated Incinerator Facility to close, and this effort is in accordance with the Savannah River Site Performance Management Plan. It is anticipated that some level of general "landlord" functions, and procurement and installation of capital equipment / general plant projects will continue until the end-date of FY 2025. (Former PBSs were SR-SW08, SR-SW09, and SR-SW01)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- In FY 2004, 144 transuranic waste shipments to the Waste Isolation Pilot Plant (4,000 drums/840 m^3) will be made, in addition to with continued receipt/storage of new waste from generators. The low-level waste legacy inventory will be eliminated, completing the disposition of all legacy low-level waste 2 years earlier than the previous baseline. Newly generated low-level waste will continue to be received and dispositioned. The legacy inventory of mixed low-level waste will be reduced by, in addition to dispositioning the newly generated waste received. The legacy hazardous waste inventory will be reduced in addition to dispositioning the newly generated waste received. Design of the alternative, non-aqueous PUREX waste treatment capability will be completed or vendor treatment capability established. Startup of this PUREX waste treatment facility/vendor initiative will allow for stabilization of approximately 25,000 gallons of legacy waste by FY 2007, 10 years earlier than the prior baseline, and treatment of approximately 60,000 gallons of F-Canyon organic PUREX by FY 2009. Small common site infrastructure projects will be completed to support the safe and reliable operation of site missions.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	136	840	840	1,876	15,326	12%
Low-Level and Mixed Low-Level Waste Disposed (m^3)	13,965	11,012	10,744	68,814	219,320	31%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed 16 transuranic waste shipments to the Waste Isolation Pilot Plant (672 drums/136 m^3) (FY 2002).
- Disposed 13,965 m^3 of low-level and mixed low-level waste (FY 2002).
- Hazardous Waste - reduced the legacy inventory by 41 m^3 and disposed newly generated waste (FY 2002).
- Complete 144 shipments of transuranic waste to the Waste Isolation Pilot Plant (4,000 drums/840 m^3) (September 2003).
- Dispose of 11,012 m^3 of low-level waste and mixed low-level waste (September 2003)
- Establish the capability to perform limited sort and segregation of drummed transuranic waste using the existing Transuranic Waste Visual Examination Facility (September 2003).
- Design the new plutonium - uranium extraction (PUREX) stabilization facility (October 2003).
- Complete treatment of the aqueous portion of the plutonium - uranium extraction (PUREX) waste at Saltstone (December 2003).
- Complete 144 shipments of transuranic waste to the Waste Isolation Pilot Plant (4,000 drums/840 m^3) (September 2004).
- Dispose of 10,744 m^3 of low-level waste/mixed low-level waste (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035 (life-cycle estimate $14,535,134K) 392,702 480,211 528,981

Approximately 37 million gallons of legacy highly radioactive waste, stored in underground storage tanks, resulting from nuclear weapons production processes exists at the Savannah River Site. In accordance with the Program Performance Management Plan for the Savannah River Site, all high-level waste will be removed from the high-level waste tanks and vitrified, and the 51 waste tanks will be filled with grout by FY 2020. All the high-level waste canisters will be shipped to the Federal repository. High-level waste processing facilities will be deactivated and their canyon cells filled with grout.

This PBS supports the mission of the high-level waste program at the Savannah River Site to safely and efficiently treat, stabilize, and dispose of approximately 37 million gallons of legacy highly radioactive waste, stored in 49 underground storage tanks (approximately 33.1 million gallons of radioactive salt waste and 3.9 million gallons of radioactive sludge waste). In addition, the Savannah River Site will reduce the volume of high-level waste by evaporation to ensure that storage tank space is available to receive additional legacy waste volume from on-going nuclear material stabilization and waste processing activities; pretreat the high-level waste by segregating the waste into sludge, low curie salt, low curie salt with higher actinide content, and high curie salt with higher actinide content allowing less costly treatment methods to be used on the waste containing lower curie levels (radioactivity) and shorter lived radionuclides; vitrify sludge and high curie/high actinide high-level waste into canisters and then store and ship the canisters to the Federal Repository for final disposal; treat and dispose the low-level waste fraction resulting from high-level waste pretreatment as Saltstone grout and treat and discharge decontaminated low level liquid wastes; empty and permanently close in place using grout all high-level waste tanks and support systems; and ensure that risks to the environment and human health and safety from high-level waste operations are eliminated or reduced to acceptable levels.

Completion of this scope will result in the permanent disposal of all the liquid high-level waste currently stored at the Savannah River Site as well as all legacy high-level waste from planned nuclear materials stabilization activities by FY 2019. It will also result in the permanent closure of the remaining 49 underground storage tanks by FY 2020 (two of the original 51 tanks have already been closed in place using grout in FY 1997).

This PBS includes $51,500,000 for continued Project Engineering and Design of the Salt Waste Processing Facility Alternative, line-item 03-D-414. Additionally, $20,259,000 is requested for construction of the Glass Waste Storage Building #2, line-item 04-D-408. Finally, this PBS also funds subprojects that have been or may have been appropriated as separate line-item control in the past, but are not proposed as separate controls in FY 2004 or the future. The appropriations for the High Level Waste Removal from Filled Waste Tanks, line-item 93-D-187, was $11,754,000 in FY 2002, and $15,324, 000 in FY 2003. The request for FY 2004 is $12,627,000. The appropriation for Saltstone Vault number 2 was $2,912,000 in FY 2003. The request is $10,081,000 for FY 2004. For more information on these subprojects, a Subproject Detail description is included in the Appendix.

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Increase the production rate at the Defense Waste Processing Facility and fill 250 canisters per year from FY 2004 – FY 2008.
- Accomplish increased production rates by completing the preparation of and feeding Sludge Batch 3 to the Defense Waste Processing Facility using a new glass formulation which allows improved waste loading capability in support of the accelerated clean up objective.
- Permanently close Tanks 18 and 19 (thus completing the closure of the first tank grouping). Complete the Tank 11 waste removal project and bulk waste removal from Tank 11 to accelerate the preparation of Sludge Batch 4.
- Complete the dissolution of low curie salt in Tank 41 and initiate dissolution of low curie salt in Tank 31.
- Pretreat and process 1,300,000 gallons of low-level radioactive salt waste into Saltstone grout leaving 31,100,000 gallons to be processed by FY 2019.
- Submit the Waste Incidental to Reprocessing for low curie salt with actinides for approval by the Savannah River Operations Office and the State of South Carolina Department of Health and Environmental Control (approval of the Waste Incidental to Reprocessing will allow continued acceleration of the high-level waste program).
- Continue 512-S modifications necessary to support actinide removal salt processing.
- Initiate construction of an additional high-level waste canister storage facility (Glass Waste Storage Building II) to support the accelerated canister production at the Defense Waste Processing Facility.
- Complete conceptual design for an optimal scale Salt Waste Processing Facility, if required, which will be used to pretreat high curie/high actinide salt waste materials unsuitable for disposal into Saltstone grout using simplified methods. The Salt Waste Processing Facility will remove cesium and actinides from the high curie/high actinide salt waste and send the high-level waste fraction to the Defense Waste Processing Facility to be vitrified and the low-level waste fraction will be disposed of into Saltstone grout.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Liquid Waste in Inventory Eliminated (thousands of gallons)	0	700	1,300	2,000	33,100	6%
Liquid Waste Tanks Closed (Number of Tanks)	0	0	2	4	51	8%
High-Level Waste Packaged for Final Disposition (Number of Containers)	160	130	250	1,717	5,060	34%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Produced 160 canisters of vitrified high-level waste out of a life-cycle total of 5,060 canisters (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Placed ~4 percent more waste in canisters at the Defense Waste Processing Facility by raising the fill height (FY 2002).
- Completed preparation of Sludge Batch 2 and began feeding to the Defense Waste Processing Facility (FY 2002).
- Returned Tank 49 to high-level waste service to provide space for waste pretreatment (FY 2002).
- Initiated low curie salt processing (FY 2002).
- Obtained approval from the South Carolina Department of Health and Environmental Control to close Tanks 18 and 19 as a group (FY 2002).
- Awarded two Engineering, Procurement, and Construction contracts and initiated conceptual designs for the Salt Waste Processing Facility (FY 2002).
- Receive Americium/Curium material from F-Canyon (March 2003).
- Complete the Defense Waste Processing Facility melter replacement (April 2003).
- Pretreat and process 700,000 gallons of salt waste into saltstone grout (September 2003).
- Produce 130 canisters of Vitrified High Level Waste (September 2003).
- Regulatory close two high-level waste tanks (Tanks 18 and 19) which completes the closure of the first tank grouping (September 2004).
- Produce 250 canisters of Vitrified High-Level Waste (September 2004).
- Prepare and feed Sludge Batch 3 to the Defense Waste Processing Facility (September 2004).
- Complete conceptual design for an optimal scale Salt Waste Processing Facility (September 2004).
- Complete the Tank II Waste Removal Project and Bulk Waste Removal from Tank II to accelerate the preparation of Sludge Batch 4 (September 2004).
- Complete the dissolution of low curie salt in Tank 41 (September 2004).
- Initiate dissolution of low curie salt in Tank 31 (September 2004).
- Pretreat and process 1,300,000 gallons of low-level radioactive salt waste into saltstone grout (September 2004).
- Initiate construction of an additional high-level waste canister storage facility (Glass Waste Storage Building II) (September 2004).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

SR-0030 / Soil and Water Remediation (life-cycle estimate $3,336,776K) 98,332 109,000 70,369

The Soil and Water Remediation PBS scope remediates contaminated waste sites and groundwater, thereby reducing risk to the site worker, the public, and the environment by 2026. For the 515 waste sites at the Savannah River Site, 281 were completed through FY 2002. For the balance to go, particular attention is paid to waste sites with mobile contaminants that are or have the potential to migrate off Savannah River Site. Remediation is planned on a prioritized risk-based approach, conducted using fundamental project management principles, implemented to be consistent with future land use and to support new missions. The aggregate of the individual projects within each of five (5) Savannah River Site watersheds and the Savannah River floodplain comprises areas of the site that can be turned over for reuse continued surveillance and monitoring.

The cleanup approach is to aggressively remove substantial sources of contaminants and manage plumes using passive and natural remedies to keep the cost of the remedy in line with risk-based end-states. This supports the accelerated clean-up objectives of constructing final remedies for soil and groundwater by 2026, 12 years ahead of the previous baseline. Waste sites and groundwater will be managed such that all regulatory compliance agreements are met. Compliance agreements reflect risk based prioritization as negotiated with the two primary regulatory oversight agencies (Environmental Protection Agency and the South Carolina Department of Health and Environmental Control). All projects will use the streamlined regulatory process that was developed between DOE, the Environmental Protection Agency, and South Carolina to shorten schedules, maximize innovation, and drive down cost to achieve accelerated risk reduction. The Savannah River Site Performance Management Plan includes high-risk projects such as the Old Radioactive Waste Burial Ground (to be completed in FY 2008) and the Dynamic Underground Stripping project (to be completed in FY 2007). (Former PBSs were SR-ER01, SR-ER02, SR-ER03, SR-ER04, SR-ER05, SR-ER06, and SR-ER07)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- Complete design, achieve Critical Decision 2/3 approval, and begin remedial action at the Old Radioactive Waste Burial Ground closure project (field start March 2004).
- Continue construction of Dynamic Underground Stripping system at M-Basin for removal of over one million pounds of solvents from the vadose zone and groundwater (start up scheduled for February 2005).
- Complete major remediation projects in the testing and experimentation areas, an industrial facility that was used for testing and experiments for fuel and target manufacturing, separations and for the Defense Waste Processing Facility adjacent to the Savannah River. Projects include Testing and Experimental Groundwater, New Testing and Experimental Seepage Basin, the Old Testing and Experimental Seepage Basin, and the Testing and Experimental Burying Ground. Complete remediation of L Reactor Seepage Basin. These activities fully support the accelerated clean-up objective of constructing final remedies for soil and groundwater by 2026, a 12-year schedule improvement from the previous baseline.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	206	0	0	206	206	100%
Remediation Complete (Number of Release Sites)	14	13	13	307	515	60%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Start dynamic underground stripping at M-Basin (Western Sector) construction (FY 2002).
- Grouted 12 Solvent Tanks at Old Radioactive Waste Burial Ground (FY 2002).
- Continued chemical, metals, and pesticides Pits Bioremediation 2nd phase (FY 2002).
- Old Radioactive Waste Burial Ground Consolidated Unit Record of Decision (highest risk project in Savannah River Site cleanup), combining four sites into one, signed by both regulatory agencies (FY 2002).
- Exceeded planned innovative technology deployments by four (FY 2002).
- Complete final design of remedy at Old Radioactive Waste Burial Ground (September 2003).
- Initiate full-scale base injection operations at F-Area Seepage Basin (October 2003).
- Start remedial action of the Old Radioactive Waste Burial Ground (March 2004).
- Complete installation of precision groundwater extraction system (April 2004).
- Begin installation of spray irrigation system (April 2004).
- Complete remediation of L Reactor Seepage Basin (April 2004).
- Complete major remediation projects in testing and experimental areas (September 2004).

SR-0040 / Nuclear Facility D&D (life-cycle estimate $8,210,092K) 20,716 18,941 30,538

The Savannah River Site has a total of 837 major facilities (both excess and operating); 29 facilities have been completed decommissioning and decontamination through FY 2002. These facilities range in size and complexity from small storage buildings to large nuclear reactors. Decommissioning places a facility in its final end-state, and can include dismantlement, decontamination, or some other activity that makes the land available for either unrestricted use or for limited application. The Savannah River Site EM End-States Plan will be completed in September 2003 and will identify the end-states for all the facilities. The Savannah River Site Cleanup Reform Vision is to accelerate completion of the Site's

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Environmental Management missions and transform the Savannah River Site fully to a site focused on National Security. The overall goal is to decommission those facilities that do not support the enduring National Security mission. The Savannah River Site Performance Management Plan outlines specific actions that DOE is taking to accelerate cleanup from 2070 to 2025. Also included in the Performance Management Plan is an initiative (DD-1) that accelerates the demolition of virtually all currently inactive facilities outside the site's central core area by 2006 and reducing life-cycle cost by $945 million. This entails the removal of up to 72 facilities, with a footprint of over 600,000 square feet, located in the T, D, and M areas, which are inactive with no defined or anticipated future mission. This initiative is consistent with the Savannah River Site Environmental Management End-States Vision to consolidate continuing National Security missions to the center of the site, and decommission inactive facilities in the Environmental Research Park surrounding the central core area. The previous baseline for these facilities provided for their deactivation in the 2000 to 2006 time frame followed by long-term surveillance and maintenance until 2070 when eventual decommissioning would take place.

In addition to dispositioning those facilities that have already been identified as excess, the program will aggressively pursue decommissioning strategies for facilities that are determined to be no longer necessary to support the Savannah River Site missions. For instance, F-Canyon, the Receiving Basin for Off-site Fuel and Consolidated Incinerator Facility are likely candidates to shutdown and transfer to the disposition program for decommissioning. (Former PBSs were SR-FA02, SR-FA16, SR-FA17, SR-FA18, SR-FA19, SR-FA20, SR-FA23, SR-FA24, SR-FA25, SR-FA27, SR-FA28, SR-FA29, SR-FA30, SR-FA31, SR-FA32, SR-FA33, SR-FA34, and SR-FA35)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Savannah River Site.

- Major activities planned in FY 2004 include the decommissioning and demolition of 23 Industrial Facilities in the T, D, and M areas, the removal of 2 nuclear facilities in M Area, and the decommissioning and demolition of 5 radioactive facilities in T and D Areas. The removal of these 30 buildings plus those completed in prior years will complete two thirds of the overall accelerated clean-up objective under the Site's Performance Management Plan to remove 72 inactive facilities outside the site's central core area by 2006.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	2	2	200	1%
Radioactive Facility Completions (Number of Facilities)	0	0	5	5	45	11%
Industrial Facility Completions (Number of Facilities)	0	21	23	44	592	7%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Initiated significant risk reduction activities, but the main focus of the decontamination and decommissioning program has been shifted from risk reduction to risk elimination (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- In FY 2002 initiated work to demolish five buildings in the T Area with a footprint reduction of over 13,900 square feet. This was an acceleration of activities proposed in the Accelerated Cleanup Initiative in the Performance Management Plan. The Savannah River Site EM End-States Plan will be coordinated with the regulators and completed in September 2003. This plan will define the end-states and appropriate disposition activities for all the Savannah River Site facilities (both operating and excess), and will drive the priority and schedule for decommissioning activities for the 837 facilities at the Savannah River Site (FY 2002 and FY 2003).
- Initiate accelerated decommissioning for six buildings in M Area with an overall footprint reduction of 182,000 square feet. This is a proposed acceleration from FY 2006 in the Accelerated Cleanup Initiative in the Performance Management Plan (FY 2003).
- Decommission and demolish 23 industrial facilities, remove two nuclear facilities, and decommission and demolish five radioactive facilities (FY 2003).

VL-LANL-0030 / Soil and Water Remediation-LANL
(life-cycle estimate $1,123,904K) 49,104 69,787 72,827

The Los Alamos National Laboratory Environmental Restoration Project resolves issues connected with historic wastes that were released into the environment since the Manhattan Project in the 1940s. More than 2,100 potential release sites spread over 43 square miles were originally identified including septic tanks and lines, chemical storage areas, wastewater outfalls, landfills, incinerators, firing ranges, surface spills, and electric transformers. Initial assessments, and grouping/consolidation for efficiency in remediation approval has reduced this number to about 1,800 sites.

The Environmental Restoration Project represented in this PBS scope is divided into eight watersheds and work within those watersheds is prioritized to assure the maximum amount of risk reduction. Since the Environmental Restoration Project began, the number of Potential Release Sites needing action has been reduced by 60 percent through active remediation or by confirming that no further characterization or cleanup action is needed. A shared commitment by the Department of Energy, University of California, New Mexico Environment Department, and the Environmental Protection Agency on risk reduction and accelerated completion will accomplish the completion of all cleanup corrective actions by 2015 and the protection of groundwater supplies at the Los Alamos National Laboratory by 2007. This commitment is documented in a Letter of Intent signed by the parties in May 2002. The Los Alamos National Laboratory Performance Management Plan (August 2002) describes the strategic initiatives, key objectives, and milestones necessary to support the completion of all Environmental Management activities at the Los Alamos National Laboratory by 2015.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

The Accelerated Environmental Restoration Initiative has three objectives. They are: 1) completion of cleanup actions in the Los Alamos/Pueblo Watershed, the highest priority watershed by 2008; 2) completion of remedy implementation on the high priority material disposal areas by 2008; and 3) completion of all other activities at the Los Alamos National Laboratory by 2015. The accelerated groundwater protection initiative will: 1) complete the characterization of the regional and shallow aquifers by 2005; 2) complete monitoring well construction by 2007; and 3) establish contaminant control at high priority shallow groundwater sites by 2005.

In FY 2004, the following activities are planned to support the accelerated risk reduction cleanup at the Los Alamos National Laboratory to be completed by 2015.

- Two regional groundwater characterization wells (R17 and R30) and four monitoring wells (wells 1-4) will be completed in support of the Groundwater Protection Initiative.
- Numerous Voluntary Corrective Actions and Voluntary Corrective Measures field-work and contaminated soil removals at Technical Area-21 including release sites 21-024 (b), (d), (e), (j), (k), (n), and (o) in support of the Accelerated Cleanup Initiative and the cleanup of the Los Alamos/Pueblo Watershed.
- The submittal of Sampling Analyses Plans for Materials Disposal Area A in support of the closure of difficult Material Disposal Areas, and at Technical Area 0, 53, 20, and 72 in support of the accelerated closure of the entire environmental restoration project.
- Remedial fieldwork will be completed at Material Disposal Area A, V, and T in support of accelerated closure of Technical Area 21 and Los Alamos/Pueblo Canyon. In addition the Corrective Measures Study Plan for Material Disposal Area U will be submitted to the regulator to support accelerated closure of Technical Area 21.
- The submittal of two final corrective measures study workplans (Material Disposal Areas G and L) to the regulator to support the accelerated characterization and closure of complex Material Disposal Areas in support of the Performance Management Plan initiative.
- The completion of fieldwork and the submittal of the Los Alamos/Pueblo Surface Aggregate Report to the regulator will address the highest risk watershed and accelerate the completion of the Los Alamos/Pueblo Canyon Watershed by 2008.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	4,952	0	0	5,426	5,426	100%
Remediation Complete (Number of Release Sites)	3	8	4	1,324	1,816	73%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Completed two well reports for R-22 and R-7; four geochemistry reports for R-15, R-9, R19, and R-12; and two no further action proposal submittals to the regulator. These activities contribute to the protection of drinking water supplies and site closure. Significant amounts of contaminated soil were removed at Technical Area 16 260 Outfall, Technical Area 35 Lagoons, and Acid Canyon (FY 2002).
- Complete four deep groundwater wells (September 2003).
- Technical Area 21 - Material Disposal Area T - complete fieldwork (March 2004).
- Technical Area 21 - complete remedial field investigation / Voluntary Corrective Action at eleven sites to include removal of structures and remediation of contaminated materials including outfalls, seepage pits, septic systems, and drainage systems (September 2004).
- Complete two deep groundwater wells (September 2004).
- Complete four monitoring wells (September 2004).

VL-NV-0030 / Soil and Water Remediation-Nevada Test Site and Offsites (life-cycle estimate $6,453,345K) 65,958 75,085 71,007

Historic atmospheric and underground nuclear tests on the Nevada Test Site, Tonopah Test Range, the U.S. Air Force's Nevada Test and Training Range, and 9 sites in 5 states resulted in contaminated support facilities, soils and groundwater. Cleanup is complex due to the number of sites, nature/extent of contamination, site size/location and numerous state regulators. Risk associated with contaminated sites off of the Nevada Test Site is due to institutional control being outside of DOE control. Until off-Nevada Test Site contaminated sites are remediated, there is risk to public (inadvertent intruder), Air Force personnel, and the environment. The Nevada Test Site surface contamination includes 1,047 industrial sites and 27,000 acres of contaminated soil in excess of 40 pCi/g. The Nevada Test Site underground nuclear test activities (908 detonations) resulted in 132M curies of radioactivity. Approximately 1/3 of subsurface contamination is near or below water table. Risk associated with the Nevada Test Site contaminated areas is principally limited to on-site workers due to strict administrative control.

Overall solution to remediate the Nevada Test Site and off-site soil and water includes:

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Complete remediation to support regulator closure of industrial release sites (mostly sites that were left after development of boreholes for underground tests)--eliminate access to contamination by removal and clean closure or closure in place, and capping and establishing appropriate use restrictions. Under strategic initiative number one in the Nevada Performance Management Plan, all Industrial Sites will be accelerated to completion by 9 years to FY 2008 from FY 2017 and will be turned back to the site landlord (National Nuclear Security Administration). Most sites will be open for free, unrestricted use;
- Establish 1,000 pCi/g corrective action level for contaminated soil and mitigate associated risk to human health and environment--focus on areas of the Tonopah Test Range, the Nevada Test and Training Range, and the Nevada Test Site where soil contamination is above 1,000 pCi/g. Contamination will be isolated and contained and/or removed. The Department will establish appropriate engineered barriers and use restrictions where contamination is not removed (primary method for the Nevada Test Site). Under strategic initiative number two in the Nevada Performance Management Plan, the soils project is accelerated to completion by 16 years, to 2010 from FY 2026. Sites on Air Force land will be returned to the Air Force, and sites on the Nevada Test Site will be returned to the National Nuclear Security Administration;
- Complete characterization of the Nevada Test Site subsurface–the Underground Test Area Project will complete predictive flow models and establish monitoring networks to ensure contaminated groundwater from underground nuclear tests remain within expected boundaries. Use restrictions and institutional controls will be put in place within predicted contaminant boundaries to preclude inadvertent contact with subsurface contaminants. Under strategic initiative number three in the Nevada Performance Management Plan, the Underground Test Area project is accelerated by 5 years to completion in FY 2027 from FY 2032; and
- Complete remediation activities to support regulatory closures of the surface and subsurface at 9 former nuclear testing sites in Alaska, Colorado, Mississippi, Nevada, and New Mexico--off-site surface closure eliminates potential access to contamination by removal and clean closure or closure in place, capping and establishing appropriate use restrictions--primary focus for most surface off-sites will be clean closure to allow unrestricted use by site landlords. Subsurface closure includes completing predictive flow models and establishing monitoring networks where necessary to ensure that contaminated groundwater remains within expected boundaries--associated use restrictions and institutional controls will be in place within the predicted contaminant boundaries to preclude inadvertent contact with subsurface contaminants. Under strategic initiative number four in the Nevada Performance Management Plan, the Offsites Project is accelerated by one year to FY 2014 from FY 2015. (Former PBSs were NV-211, NV-212, NV-214, and NV-240)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Nevada Test Site.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Closure of 55 industrial release sites will reduce potential liabilities from uncontrolled contamination, reduce exposure to workers and the United Sates Air Force personnel, allow for unrestricted use of land and facilities for existing and new missions, and maintain the schedule for accelerated closure of all industrial release sites by FY 2008.
- Formal closure of 2 interim action soil sites (Double Tracks and Clean Slates 1) where remedial actions are already completed will allow for unrestricted use of land by the United States Air Force for existing and new missions.
- Completion of Pahute Mesa groundwater analyses, Yucca Flat well development and testing, and the Central Nevada Test Area subsurface monitoring wells will provide a greater understanding of the risks associated with groundwater contamination. This understanding will enable Nevada to manage risk to off-site receptors and reduce uncertainty associated with predicted volumes of contaminated groundwater which will enable efforts to close all former nuclear test sites (off the Nevada Test Site) by FY 2014 and the underground test area of the Nevada Test Site by the accelerated end date of FY 2027.
- Completion of Rio Blanco surface remediation in Colorado will establish site-specific institutional controls, reduce the potential for inadvertent exposures to the public, allow for release of the surface for alternative uses by Rio Blanco landlords, and advance the completion of all off-Nevada Test Site nuclear test area surface closures by FY 2006.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Remediation Complete (Number of Release Sites)	15	46	55	780	2,101	37%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Closed and remediated eight industrial sites. As of FY 2002, completed 629 industrial sites out of 1,047 sites. (FY 2002).
- Complete assessment of two Shoal (Nevada) subsurface release sites, which will support subsurface closure (March 2003).
- Complete assessment of two Rio Blanco (Colorado) surface release sites, which will support subsurface closure (June 2003).
- Complete assessment of three Central Nevada Test Area subsurface release sites, which will support surface closure (June 2003).
- Complete assessment of one Gnome Coach (New Mexico) surface release site, which will support surface closure (July 2003).
- Complete assessment of 14 Gasbuggy (New Mexico) surface release sites, which will support surface closure (September 2003).
- Complete surface area cleanup of Salmon (Mississippi) site (September 2003).
- Complete remediation of 46 out of 1,047 industrial release sites (September 2003).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Drill five deep wells in Yucca Flat to establish groundwater contaminant boundaries from underground nuclear testing (September 2003).
- Complete Yucca Flat Phase I well development and testing (August 2004).
- Complete remediation of 55 out of 1,047 industrial release sites (September 2004).

VL-NV-0080 / Operate Waste Disposal Facility-Nevada
(life-cycle estimate $489,424K) 4,454 5,967 5,438

Waste management disposal operations are maintained and operated in accordance with all requirements, including safety authorization bases. Nevada ensures that waste acceptance criteria are efficient, effective, and regulatory-based to protect human health and environmental safety. Performance Assessment/Composite Analysis data is maintained to ensure the site remains compliant with its Disposal Authorization Statement. State comments on the Resource Conservation and Recovery Act Part B Permit to allow receipt of off-site generated mixed low-level waste are proactively being addressed.

Nevada maintains the capability to dispose low-level waste from approved on- and off-site generators throughout the DOE complex and mixed low-level waste from specific generators as allowed under permit conditions as administered by the State of Nevada. Projected total Nevada Test Site low-level waste and mixed low-level waste life-cycle disposal volume from complex-wide generators is approximately 1.2M m^3. Activities include Performance Assessment/Composite Analysis maintenance in support of the Disposal Authorization Statement, safety authorization document maintenance, the Nevada Test Site waste acceptance program maintenance, required environmental monitoring/closure planning, and update/maintenance of the Nevada Test Site Resource Conservation and Recovery Act Part B Permit. Mixed low-level waste is managed according to the Resource Conservation and Recovery Act, Federal Facility Compliance Act Consent Order and Mutual Consent Agreement to reduce potential risks to human health and the environment. Mixed low-level waste management includes identifying treatment options, selecting preferred and alternative treatment methods, verifying that the waste meets acceptance criteria required by treatment and disposal sites, shipping and tracking waste through disposal. Mixed low-level waste generated by EM at the Nevada Test Site is temporarily stored pending treatment and/or disposal in accordance with the Mutual Consent Agreement. Long-term surveillance, maintenance, and monitoring of Nevada Test Site disposal areas will continue for 100 years post closure by the landlord.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Under strategic initiative number six of the Nevada Performance Management Plan, acceptance of low-level waste and mixed low-level waste will continue under EM management in support of the DOE complex until FY 2021, when activities will transition to the landlord. Individual disposal cells will be closed as they reach capacity prior to 2021. The end-state will be the closure, and capping of the disposal areas by the EM program, with subsequent monitoring and institutional control maintained by the Nevada Test Site landlord, the National Nuclear Security Administration. Closure and long-term monitoring obligations will be implemented in accordance with regulatory requirements to ensure there is no risk to workers, the public, and the environment as the result of disposed waste. (Former PBSs were NV-360 and NV-370)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Nevada Test Site and the other EM sites.

- Nevada Test Site waste disposal capability will remain open to other DOE sites until 2021 in support of their risk reduction and acceleration activities. Opportunities for further efficiencies in waste operations will be evaluated. Quantities are determined by the generator site throughout the DOE Complex.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Low-Level and Mixed Low-Level Waste Disposed (m^3)	65,717	0	0	147,333	147,333	100%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Cumulatively disposed of 689,168 m^3 of low-level waste and mixed low-level waste from complex-wide generators (FY 2002).
- Disposed of 65,717 m^3 from complex-wide generators (FY 2002).
- Continue to dispose low-level waste from complex-wide generators in support of closure of other EM sites estimated at 113,600 m^3 (September 2003).
- Continue to dispose low-level waste from complex-wide generators in support of closure of other EM sites estimated at 99,100 m^3 (September 2004).

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit (life-cycle estimate $245,287K) 1,205 4,329 5,565

The Separations Process Research Unit is an inactive Atomic Energy Commission facility that supported the Manhattan Project in the early 1950's. Separations Process Research Unit was a chemical processing pilot plant used to test and prove the process of separating plutonium for irradiated fuel. The operation of the facilities contaminated the nuclear facilities, auxiliary structures used to manage waste, surrounding land, and groundwater in the immediate vicinity of the nuclear facilities. The cleanup project objectives as defined in the Performance Management Plan (August 2002) are to: characterize and remove the chemical and radiological contamination in the land surrounding the sites where waste

was stored and address groundwater contamination, thereby cleaning up ninety percent of the facility footprint by 2006; characterize and remove the transuranic waste contained in the Separations Process Research Unit waste tanks and tank enclosures, and ship the waste to the Waste Isolation Pilot Plant facility by 2011; and characterize, decontaminate, dismantle, and demolish the nuclear facilities by 2012. After demolition, the incidental remaining land will be chemically and radiologically cleaned, restored, and returned to the Knolls Atomic Power Laboratory for continued mission use.

The end-state of the Separations Process Research Unit will be to return the land to Schenectady Naval Reactors, Knolls Atomic Power Laboratory, for unrestricted mission use. No long-term stewardship of the cleaned land areas after building demolition is anticipated.

Focus of the strategic initiatives to accelerate completion of the Separations Process Research Unit include the initiation of the radiological characterization of land and the second phase of chemical characterization of the land including groundwater characterization. (Former PBS was OK-043)

In FY 2004, the following activities are planned to support the accelerated cleanup of the Separations Process Research Unit.

- Complete seventy percent of the soil borings, and groundwater sampling points, to chemically and radiologically identify the soil required to be removed.
- Complete corrective measures needed for groundwater to achieve the accelerated performance milestone of cleanup of ninety percent of the land by 2006.

Metrics	FY 2002	FY 2003	FY 2004	Cumulative Complete FY 2004	Life-cycle Quantity	FY 2004 % Complete
Transuranic Waste Shipped for Disposal at WIPP (m^3)	0	0	0	0	50	0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	4	0%
Remediation Complete (Number of Release Sites)	0	0	0	0	6	0%

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Complete chemical and groundwater characterization work plan (FY 2002).
- Complete radiological land characterization plan to identify sampling to quantify the area of contaminated soil to be removed and identify contaminated water (FY 2002).
- Complete sampling of land area surrounding three nuclear facilities (Building 62, H2, and the tank enclosures) to identify soil and groundwater contamination (September 2004).
- Complete sampling of land at six release sites where waste was formerly managed (September 2004).

	(dollars in thousands)		
	FY 2002	FY 2003	FY 2004
Total, Defense Site Acceleration Completion, 2035 Accelerated Completions	**1,627,631**	**1,884,074**	**1,978,597**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
CB-0080 / Operate Waste Disposal Facility-WIPP	
■ Decrease in funding due to efficiencies in site operations at the Waste Isolation Pilot Plant.	-4,672
CB-0090 / Transportation-WIPP	
■ Carrier costs increase due to accelerated shipping volumes. Mobile large-box system and remote-handled mobile loading unit are procured.	9,623
OR-0041 / Nuclear Facility D&D-Y-12	
■ Increased funding requirements in FY 2004 reflect Environmental Management Waste Management Facility receiving larger waste quantities from the cleanup projects. In addition the East End Volatile Organic Compound Plume remediation is started in FY 2004.	23,801
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	
■ Decreased funding is due to completion of the Surface Impoundments excavation in FY 2003. Corehole 8 plume source remediation a higher risk project, is started in FY 2004.	-3,303
RL-0013 / Solid Waste Stabilization and Disposition-200 Area	
■ The increase in funding provides acceleration in transuranic waste retrieval, certification, and shipments (78 m^3 in FY 2003 to 200 m^3 in FY 2004), an increase of mixed waste treatment and disposal, and for the procurement of casks for dry storage of cesium and strontium capsules.	18,943
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone	
■ The increase in FY 2004 is for treatment and remediation of carbon tetrachloride and strontium contaminated groundwater plumes, new monitoring well installations, and old monitoring well decommissioning. Additional funding will also be used to reduce groundwater recharge by closing high risk wells (eliminating man-induced recharge), accelerate implementation of final groundwater remedies, and complete final integrated site-wide monitoring system.	7,176

	FY 2004 vs. FY 2003 ($000)
RL-0040 / Nuclear Facility D&D-Remainder of Hanford	
■ The increase in funding supports acceleration of the U-Plant regional closure, elimination of the U Plant Area septic system discharges, and starts test barrier construction. The increase also accelerates repairs, upgrades, rerouting, deactivation or removal of U Plant Area water lines (these support 222-S lab), replaces water lines to support Waste Treatment Plant, and starts remediation of 200 Area B/C cribs. Finally, the increase accelerates demolition of 200 Area facilities (224-T and 224-B) in order to achieve completion by September 30, 2006.	29,203
RL-0080 / Operate Waste Disposal Facility	
■ No significant change.	-101
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	
■ Reduction of funds reflects the completion of single-shell tank interim stabilization in FY 2003 and continued improvements to tank farm operational efficiencies. It also results from the completion of the first single-shell tank closure in 2004 and incorporation of lessons-learned to reduce the cost of the following tanks.	-47,542
SR-0011C / NM Stabilization and Disposition-2035	
■ Increase in funding to accelerate receipts of plutonium from Rocky Flats Environmental Technology Plant and Richland.	25,507
SR-0012 / SNF Stabilization and Disposition	
■ Increase in funding to accelerate shipments of legacy spent nuclear fuel to the separations facilities for stabilization.	6,451
SR-0013 / Solid Waste Stabilization and Disposition	
■ Increase supports the accelerated disposition of several waste streams at Savannah River including packaging high-activity transuranic waste to go to the Waste Isolation Pilot Plant and the need to stabilize low-level PUREX waste solutions.	8,032
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition	
■ Increase in funding allows the high-level waste program to continue on-track for completion 8 years earlier and $7 billion less in program life-cycle costs than the previous baseline. This includes acceleration of Sludge Batch 3 (provides feed for accelerated operation of the Defense Waste Processing Facility); completion of the Tank 11 waste removal project and bulk waste removal from Tank 11 (acceleration of Sludge Batch 4); operation of the low curie salt process to accelerate salt waste disposition by 1,300,000 gallons rather than the previous baseline to initiate salt processing in 2010; initiation of construction of the Glass Waste Storage Building II to support accelerated canister production at the Defense Waste processing Facility; preliminary design of the Salt Waste Processing Facility to allow for accelerated salt waste disposition; and accelerate 512-S modifications necessary to support actinide removal salt processing.	48,770

	FY 2004 vs. FY 2003 ($000)
SR-0030 / Soil and Water Remediation	
■ Decrease in funding is related to a more aggressive approach to focus on high risk source cleanup/closure activities and other accelerations of those activities that have outcomes with significant risk reduction benefit rather than previously scheduled lower risk activities.	-38,631
SR-0040 / Nuclear Facility D&D	
■ Increase in funding accelerates the demolition of virtually all currently inactive facilities outside the site's central core area by 2006. The broader scope of the facilities disposition vision changes the emphasis from managing risk to the elimination of risk; significantly reduces the lifecycle cost for these facilities; supports the Savannah River Site Comprehensive Plan objective to move all functions toward the center of the site; and supports the EM objectives of accelerated cleanup and footprint reduction.	11,597
VL-LANL-0030 / Soil and Water Remediation-Los Alamos National Laboratory	
■ Increase in funding to accelerated cleanup efforts that support the completion of all EM activities at the Los Alamos National Laboratory by 2015 as described in the Performance Management Plan.	3,040
VL-NV-0030 / Soil and Water Remediation-Nevada Test Site and Offsites	
■ Funding levels decrease slightly because the FY 2003 budget reflects drilling of five deep groundwater wells at Yucca Flat.	-4,078
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	
■ No significant change.	-529
OK-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	
■ Increase in funding is to complete the sampling phase of the land area cleanup and provide the characterization information needed to place the cleanup contract in early FY 2005 in support of strategic initiative number one, completion of land area cleanup by end of FY 2007 in the Separations Process research Unit Performance Management Plan.	1,236
Total Funding Change, Defense Site Acceleration Completion, 2035 Accelerated Completions	**94,523**

Capital Operating Expenses & Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	35,234	66,647	51,392	-15,255	-22.9%
Capital Equipment	38,840	26,661	32,195	5,534	20.8%
Total, Capital Operating Expense	74,074	93,308	83,587	-9,721	-10.4%

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2002	FY 2003	FY 2004	Unappropriated Balance
Defense Site Acceleration Completion						
2012 Accelerated Completions						
04-D-414, Project Engineering and Design, VL	TBD	0	0	0	23,500	TBD
04-D-423, 3013 Container Surveillance Capability in 235-F, SR, SR-0011B	TBD	0	0	0	1,134	TBD
02-D-402, INTEC Cathodic Protection System Expansion, ID, INEEL-0014B	5,047	0	2,802	1,119	1,126	0
01-D-416, Waste Treatment and Immobilization Plant, RL, ORP-0060	4,350,000	401,171	665,000	690,000	690,000	1,903,829
01-D-414, Project Engineering & Design, VL, INEEL-0014B	603	499	104	0	0	0
Total, 2012 Accelerated Completions	N/A	N/A	667,906	691,119	715,760	N/A
2035 Accelerated Completions						
03-D-403, Immobilized High Level Waste Interim Storage Facility, RP, ORP-0014	61,150	0	0	6,363	13,954	40,833
03-D-414, Project Engineering and Design, VL	70,300	0	0	8,800	51,500	10,000
04-D-408, Glass Waste Storage Building #2, SR, SR-0014C	86,000	0	0	0	20,259	65,741
Total, 2035 Accelerated Completions	N/A	N/A	0	15,163	85,713	N/A

04-D-414, Environmental Management, Project Engineering and Design (PED), Various Locations

Significant Changes

- None.

1. Schedule History

	Fiscal Quarter				Total Estimated Cost (TEC) (Design Only) ($000)	Full Total Estimated Cost (TEC) Projection Range ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request	1Q 2004	4Q 2004	N/A	N/A	TBD	TBD

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2004	23,500	23,500	23,500
2005	TBD	TBD	TBD

3. Project Description, Justification, and Scope

This construction project data sheet summarizes the Environmental Management requirements for architect-engineering services, preliminary design, and final design for several projects. This data sheet includes projects which will be proceeding from conceptual design into preliminary design and final design during FY 2004. The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules including procurements.

The FY 2001 Energy and Water Development Appropriations Act supports Departmental requests for "project engineering and design" funds for the purpose of achieving a 30-35 percent level of engineering design for new construction projects prior to requesting construction funding. Such an advanced design should provide a more mature technical and cost baseline, ensuring greater likelihood of achieving project cost and schedule adherence.

The project baseline will be the basis for the request to Congress for authorization and appropriation for physical construction and procurement. For certain projects, in order to meet project schedules, construction and/or procurement activities may be required in the same year as the preliminary design, Project Baseline and Acquisition Executive approval is completed. For those projects, a report will be provided to Congress with the results of preliminary design, project baseline, external independent reviews and acquisition executive approval. Long-lead procurement and/or construction start will not proceed until 30 days after the report has been submitted to Congress. Each project that proceeds to physical construction will be separated into an individual construction line-item, the total estimated cost of which will identify the costs of the engineering and design activities funded through the project engineering and design account.

4. Details of Cost Estimate (Total PED)

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs (Design Drawings and Specifications)	TBD	N/A
Design Management Costs	TBD	N/A
Project Management Costs	TBD	N/A
Total Design Costs	TBD	N/A

5. Method of Performance

Please refer to the individual subprojects for contract strategies.

FY 2004 Proposed Design Project

04-01, 3013 Container Surveillance Capability in 235-F, Savannah River Site, Aiken, South Carolina (SR-0011B)

A-E Work Initiated	A-E Work Completed	Physical Construction		Total Estimated Cost (Design Only $000)	Full Total Estimated Cost Projection ($000)
		Start	Complete		
1Q 2003	TBD	TBD	TBD	TBD	TBD

(dollars in thousands)

Fiscal Year	Appropriation	Obligations	Costs
2004	3,000	3,000	3,000
Outyears	TBD	TBD	TBD

The Savannah River Site is currently receiving plutonium bearing materials that are packaged in accordance with the DOE-Standard-3013*, Stabilization and Packaging of Plutonium Bearing Materials for Interim (50 year) Storage*. In addition, the FB-Line at Savannah River will soon begin the 3013 stabilization and packaging of the Savannah River plutonium inventory. Once the stabilization and packaging activities are complete, the FB-Line will be de-inventoried and can be shutdown in the FY 2007 time frame to reduce security and mortgage costs. This project will provide a long-term capability for surveillance including the re-stabilization and re-packaging of any off-normal materials detected during surveillance. These capabilities are needed to safely and cost effectively continue the plutonium storage mission at Savannah River.

The modifications may include the installation of glove-boxes, furnaces, radio-graphic and welding equipment in an existing Savannah River facility. Support equipment such as ventilation, dry air, inert gases and storage capability will be added as required.

Savannah River's Performance Management Plan identifies a target date of FY 2006 for the completion of FB Line and F Canyon activities and to initiate deactivation activities. This will result in the most significant near-term cost savings at Savannah River. One of the critical paths to achieving this goal is to establish a 3013 container surveillance capability in a facility other than FB Line. The proposed FY 2004 Project Engineering and Design funding will provide the initiation of preliminary design to complete the project on time. The current plan is to request Critical Decision-0, Approve Mission Need, for the project by the 2nd Quarter FY 2003. Critical Decision-1, Approve Preliminary Baseline Range, is tentatively scheduled for July 2003. Construction line-item 04-D-423, 3013 Container Surveillance Capability in 235-F, is being requested in FY 2004 to initiate long-lead construction activities in order to meet the acceleration plans, even though many details of the project are now unknown. The FY 2004 Project Engineering and Design appropriation estimates are parametric based on similar projects. Total Estimated Cost for preliminary and final design will be refined during conceptual design and revised accordingly.

The Total Estimated Cost (design and construction) business decision estimate range is under development. The budget authority requested for FY 2004 construction is for dismantlement and removal and long-lead procurements and is a parametric estimate based on similar projects. Total Estimated Cost for construction will be refined during conceptual design and revised accordingly.

The project is subject to The Department Order 413.3, Program and Project Management for the Acquisition of Capital Assets, accordingly baselines for Total Project Cost will be established at the completion of preliminary design (Critical Decision 2) and after the associated external independent reviews.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs	TBD	TBD
Design Management Costs	TBD	TBD
Project Management Costs	TBD	TBD
Total, engineering, design, inspection, and administration of construction costs	TBD	TBD
Construction Phase		
FY 2004 Advance Procurement	TBD	TBD
Outyear Advance Procurements	TBD	TBD
Construction	TBD	TBD
Total, Construction Costs	TBD	TBD
Total, Line-Item Costs (TEC)	TBD	TBD

5. Method of Performance

Design, construction, and procurement may be accomplished by the Management and Operating contractor. Specific scopes of work within this project may be accomplished by fixed-price contracts awarded on the basis of competitive bidding.

The project will be conducted in accordance with the project management requirements in Department Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2004	Outyears	Total
Project Cost				
Facility Cost				
Design (PED)	0	3,000	TBD	TBD
Total, Facility Costs	0	3,000	TBD	TBD
Other Project Costs	0			
R&D necessary to complete project	0	0	0	TBD
Conceptual Design Cost	750	0	0	750
Other Project-Related Costs	0	0	TBD	TBD
Total, Other Project Costs	750	0	TBD	TBD
Total, Project Costs (TPC)	750	3,000	TBD	TBD

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual Facility Operating Costs	TBD	TBD
Annual Facility Maintenance and Repair Costs	TBD	TBD
Annual Utility Costs	TBD	TBD
Total, Related Annual Funding (Operating from FY 2004 through FY 2007)	TBD	TBD

04-02, Sodium Bearing Waste Treatment Facility, Idaho National Engineering and Environmental Laboratory, Idaho Falls, Idaho (ID-INEEL-0014B)

A-E Work Initiated	A-E Work Completed	Physical Construction		Total Estimated Cost (Design Only $000)	Full Total Estimated Cost Projection ($000)
		Start	Complete		
1Q 2004	4Q 2004	N/A	N/A	TBD	TBD

Fiscal Year	Appropriation	Obligations	Costs
2004	20,500	20,500	20,500
2005	TBD	TBD	TBD

This budget request provides for Architect-Engineering Services (Preliminary and Final Engineering Design), and project management on the Sodium Bearing Waste Treatment Facility. The design effort for this project which will sufficiently detail the alternative selected and achieve a high confidence baseline to establish the acquisition performance baseline. The Sodium Bearing Waste Treatment Facility supports the Department of Energy's (DOE's) Environmental Management (EM) mission of safely storing/treating liquid radioactive wastes. The treatment facility, as planned, supports the EM initiative to accelerate clean up and reduce risk to the environment. The scope and primary goal of the project is to design a treatment process system that will treat the sodium-bearing liquids, the solids that have accumulated in the tanks, and any newly generated liquid waste coming from on-going operations and decontamination and decommissioning activities into a final waste form.

The current DOE mission at the Idaho Nuclear Technology and Engineering Center includes cleaning up and managing radioactive and hazardous waste previously generated from nuclear fuel reprocessing activities. One of the major remaining waste forms at the Idaho Nuclear Technology and Engineering Center is liquid mixed transuranic waste. This waste is locally defined as sodium bearing waste, due to its high content of sodium and potassium. Sodium bearing waste and newly generated liquid waste were primarily generated from past and ongoing waste management and decontamination activities. The present inventory of nearly 900,000 gallons of sodium bearing waste is stored in eleven, 35-45 year old, 300,000 gallon, underground tanks in the Tank Farm Facility.

Five of the Tank Farm Facility’s eleven storage tanks are located in concrete vaults of a design that does not meet present structural safety requirements (the pillar and panel tanks) and none of the tanks have

secondary containment capabilities that satisfy current Resource Conservation and Recovery Act requirements. The evacuation of the tank contents by calcination (or otherwise treated versus simple transfer to Resource Conservation and Recovery Act compliant tanks) is also required.

The waste management/storage systems at the Idaho Nuclear Technology and Engineering Center currently operate under Resource Conservation and Recovery Act Part A interim status and a notice of non-compliance consent order. However, a series of disputes over waste management and treatment and new waste and spent nuclear fuel shipments into the State of Idaho resulted in a court ordered Settlement Agreement that was reached between Idaho and DOE in October 1995. Among many other things, the Settlement Agreement requires ”cease-use” of the Tank Farm Facility tanks by December 31, 2012, due to their age, Resource Conservation and Recovery Act non-compliant configuration, and the seismic risk of release of their contents to the underlying Snake River Plain Aquifer. The 1998 Non-Consent Order Modification also requires cease-use of the Tank Farm Facility by December 31, 2012.

Feasible alternative technologies have been identified and downselected through various systematic analysis and also the National Environmental Policy Act process. Continued downselection to two technologies will be accomplished prior to CD-1. As part of the downselection process, cost/benefit studies using risk weighted cost estimates are being used to rank the alternative technologies. The strategy is to select a technology that not only provides the best cost/benefit to the government, but also reduces risk. Each alternative has unique technical, cost, schedule, and political risks. As a risk mitigation strategy, the current plan is to proceed through Conceptual Design with four technologies. A Preliminary Design will be completed for each of the four alternative technologies. The project baseline will be based on a final single technology selected at the end of Preliminary Design and prior to CD-2, which is planned by the end of FY 2005. Because of the defense waste component in the sodium bearing waste, the major portion of it is proposed to be disposed at a National Waste Repository. A Waste Incidental to Reprocessing ruling to classify the sodium bearing waste as non-high level waste is currently under consideration. As part of the project risk mitigation strategy, current planning does not include interim storage for the final waste form. It has been planned that waste will be shipped and disposed of on a just-in-time basis.

The Total Estimated Cost (design and construction) business decision estimate range is under development. The budget authority requested in FY 2004 is for preliminary design.

Design services will be obtained through competitively bid, cost-reimbursable subcontracts. The Management and Operations contractor staff may be utilized in areas involving security, production, and proliferation, concerns.

Compliance with Project Management DOE Order 413.1

- CD-0, Approve Mission Need - Approval 2Q 2003
- CD-1, Approve Preliminary Baseline Range - 1Q 2004
- CD-2, Approve Performance Baseline - 4Q 2005
- CD-3, Approve Start of Construction - FY 2006
- CD-4, Approval of Start of Operations - TBD

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs (Design Drawings and Specifications)	TBD	N/A
Design Management [a] Costs	TBD	N/A
Project Management [b] Costs	TBD	N/A
Total Design Costs	TBD	N/A

5. Method of Performance

Design services will be obtained through competitive bid, cost-reimbursable subcontracts. Management and Operations (M&O) contractor staff may be utilized in areas involving security, production, and proliferation, etc. concerns.

6. Schedule of Project Funding [c]

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	Outyears	Total
Facility Cost					
Preliminary Design	0	0	20,500	TBD	TBD
Final Design	0	0	0	TBD	TBD
Total, Facility Costs (Federal and Non-Federal)	0	0	20,500	TBD	TBD
Other Project Costs	0				
R&D Costs	0	14,000	0	TBD	TBD
Conceptual Design Cost	0	23,500	0	TBD	TBD
NEPA Documentation Costs [d]	0	0	0	TBD	TBD
Other Project-Related Costs	0	0	7,900	TBD	TBD
Total, Other Project Costs	0	37,500	7,900	TBD	TBD
Total, Project Costs (TPC)	0	37,500	28,400	TBD	TBD

[a] Design Management consists of oversight and control of design activities, not the actual design costs.

[b] Project Management includes activities for the project manager, design reviews, project document control, project manager supervision, cost estimating, and conduct of operations.

[c] This schedule reflects planned cash flow, not funding (appropriations).

[d] The Idaho High Level Waste and Facility Disposition EIS has been in progress since 1998 and was completed in December 2002.

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual Facility Operating Costs (Staff, Utilities, etc.)	N/A	N/A
Annual Facility Maintenance and Repair Costs	N/A	N/A
Programmatic Operating Expenses Directly Related to the Facility	N/A	N/A
Other Annual Costs	N/A	N/A
Total, Related Annual Funding (Operating from FY 2003 through FY 2008)	N/A	N/A

04-D-423, 3013 Container Surveillance Capability in 235-F, Savannah River Site, Aiken, South Carolina (SR-0011B)

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 2004 (Preliminary Estimate)	1Q 2004	4Q 2005	2Q 2004	4Q 2006	TBD	TBD

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2004 [a]	1,134	1,134	1,134
Outyears	TBD	TBD	TBD

3. Project Description, Justification and Scope

Savannah River's Performance Management Plan identifies a target date of FY 2006 for the completion of FB Line and F Canyon activities and to initiate deactivation activities. This will result in the most significant near-term cost savings at Savannah River. One of the critical paths to achieving this goal is to establish a 3013 container surveillance capability in a facility other than FB Line.

The Savannah River Site is currently receiving plutonium bearing materials that are packaged in accordance with the DOE-STD-3013*, Stabilization and Packaging of Plutonium Bearing Materials for Interim (50 year) Storage*. In addition, the FB-Line at the Savannah River Site will soon begin the 3013 stabilization and packaging of the plutonium inventory. Once the stabilization and packaging activities are complete, the FB-Line will be de-inventoried and can be shutdown in the FY 2007 time frame to reduce security and 'mortgage' costs. This project will provide a long-term capability for surveillance including the re-stabilization and re-packaging of any off-normal materials detected during surveillance. These capabilities are needed to safely and cost effectively continue the plutonium storage mission at the Savannah River Site.

The modifications may include the installation of glove-boxes, furnaces, radio-graphic and welding equipment in an existing Savannah River Site facility. Support equipment such as ventilation, dry air, inert gases and storage capability will be added as required.

[a] Excludes FY 2004 PED funds of $3,000,000 requested on Project 04-D-414.

The proposed funding will provide the initiation of preliminary design to complete the project on time. The current plan is to request Critical Decision-0, Approve Mission Need, for the project by the end of the 2nd Quarter FY 2003. Critical Decision-1, Approve Preliminary Baseline Range, is tentatively scheduled for 4th Quarter 2003. Construction funding is being requested in FY 2004 to initiate long-lead construction activities in order to meet the acceleration plans, even though many details of the project are now unknown. The FY 2004 appropriation request is parametric based on similar projects. Total Estimated Cost will be established during preliminary design.

The Total Estimated Cost (design and construction) business decision estimate range is under development. The requested FY 2004 budget authority is for preliminary design, dismantlement and removal, and long-lead procurements and is a parametric estimate based on similar projects. Total Estimated Cost for dismantlement and removal and long-lead equipment will be refined during conceptual design and revised accordingly.

The project is subject to DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets, accordingly baselines for Total Project Cost will be established at the completion of preliminary design (Critical Decision 2) and after the associated external independent reviews. Critical Decision-O (Approve Mission Need) is expected in the second quarter of FY 2003, with Critical Decision-1 (Approve Preliminary Baseline Range) expected in the fourth quarter of FY 2003.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Facility Costs		
Preliminary and Final Design Costs	TBD	TBD
Design Management Costs	0	TBD
Project Management Costs	0	TBD
Subtotal, design costs	TBD	TBD
Construction Costs		
FY 2004 Advance Procurement	1,134	TBD
Construction	TBD	TBD
Subtotal construction costs	TBD	TBD
Total, facility costs	TBD	TBD
Other Project Costs		
Other Project Costs	TBD	0
Total Project Cost	TBD	0

5. Method of Performance

Design, construction, and procurement may be accomplished by the Management and Operating contractor. Specific scopes of work within this project may be accomplished by fixed-price contracts awarded on the basis of competitive bidding.

The project will be conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2004	Outyears	Total
Project cost				
Facility cost				
Construction	0	1,134	TBD	TBD
Total, Facility Costs	0	1,134	TBD	TBD
Other Project Costs				
R&D necessary to complete project	0	0	0	TBD
Conceptual Design Costs	0	0	0	TBD
Other Project-Related Costs	0	0	TBD	TBD
Total, Other Project Costs	0	TBD	TBD	TBD
Total, Project Costs (TPC)	0	TBD	TBD	TBD

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual Facility Operating Costs	TBD	TBD
Annual Facility Maintenance and Repair Costs	TBD	TBD
Annual Utility Costs	TBD	TBD
Total, related annual funding *(operating from FY 2004 through FY 2007)*	TBD	TBD

02-D-402, INTEC Cathodic Protection System Expansion Project, Idaho National Engineering and Environmental Laboratory, Idaho Falls, Idaho (ID-INEEL-0014B)

(Changes from FY 2003 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 2001 Budget Request *(Preliminary Estimate)*	2Q 2001	2Q 2002	3Q 2002	4Q 2004	6,000	6,709
FY 2002 Budget Request (*Preliminary Estimate*)	2Q 2001	2Q 2002	3Q 2002	4Q 2004	6,000	6,689
FY 2003 Budget Request *(Preliminary Estimate)*	2Q 2001	2Q 2002	3Q 2002	4Q 2004	6,000	6,689
FY 2004 Budget Request *(Preliminary Estimate)*	2Q 2001	3Q 2002	1Q 2002	4Q 2004	5,650 [a]	6,689

[a] Reflects $350,000 reduction due to FY 2002 internal reprogramming to correct environmental, safety and health issues.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2001 (PED-01-D-414)	499 [a]	499	216
2002 (PED-01-D-414)	104 [a]	104	385
2002	2,802	2,802	60
2003	1,119	1,119	2,490
2004	1,126	1,126	2,499

3. Project Description, Justification and Scope

The Cathodic Protection System Expansion Project will upgrade the existing cathodic protection system located at Idaho Nuclear Technology Engineering Center at the Idaho National Engineering and Environmental Laboratory. This project is necessary to provide reliable cathodic protection as necessary to prevent underground system failures, environmental contamination, and impacts to meeting the Idaho Settlement Agreement. The project has been designed and will be constructed using standard components and techniques, incorporating improvements in technology that have occurred over the years. Since the scope of the project is well-defined and standard components and subsystems will be used to upgrade the system, the risk of significant changes in the preliminary baseline are relatively low.

The existing cathodic protection system has been in operation at this facility since 1961, and must remain operational until at least 2035. Currently the majority of this cathodic protection system has exceeded its 20-year design life. At present, there exists at Idaho Nuclear Technology Engineering Center over 4 miles of metallic underground radioactive waste piping, 1.1 miles of underground off-gas lines, over 5 miles of other metallic underground piping systems, and several underground metallic fuel storage structures that must be protected from external corrosion. Visual inspection of underground metallic piping, which is anywhere from 6 to 20 feet below grade, would require extensive excavation and destructive examination to determine the extent of corrosion to the pipe. This type of inspection would be cost prohibitive and would not provide a comprehensive condition status. In order for the Department of Energy to protect the environment, comply with the Code of Federal Regulations, and meet all mandatory and legal agreements, a well-maintained impressed cathodic protection system is required to be operational until at least 2035.

[a] Reflects an FY 2001 rescission of $1,000. The original appropriation was $500,000. The design funds were approved in the Project Engineering and Design data sheet, Project 01-D-414 for FY 2001/FY 2002 (Subproject 01-01).

Idaho Nuclear Technology Engineering Center at the Idaho National Engineering and Environmental Laboratory has an extensive cathodic protection system installed to prevent metallic underground piping and structures from corrosion. The High Level Liquid Waste Tank Farm Resource Conservation and Recovery Act interim status document requires, a fully operating cathodic protection system that meets the criteria contained in 40 CFR 264, and 265. The Cathodic Protection System Expansion Project incorporates replacing anodes that have exceeded their design life in numerous areas of the Idaho Nuclear Technology Engineering Center, adding additional anodes where required for complete protection, and installing permanent reference electrodes for more accurate survey readings.

The anodes installed in the Tank Farm and the Dry Fuel Storage Area have exceeded their design life of 20 years. Annual surveys of these areas have revealed reduced voltage drops indicative of anode wear. Leaks from underground tanks, piping, or vaults could occur from these areas and would result in a Resource Conservation and Recovery Act violation. Without a properly functioning cathodic protection system, the risk of a structural or piping failure increases.

The 1996 annual cathodic protection system survey revealed out-of-tolerance operating conditions for the Tank Farm. Negative out-of-tolerance readings indicate that full protection to steel structures is not being obtained. With negative out-of-tolerance readings, partial protection to the underground structures will occur. When underground structures receive partial protection they are subject to corrosion at a higher rate than at full protection. The 1996 survey also indicated some positive out-of-tolerance readings from possible anode and/or cable failures.

In 1997, the Management and Operations contractor evaluated the condition of the Tank Farm cathodic protection system and provided short and long-term recommendations for cathodic protection system repairs at the Tank Farm. Short-term recommendations have been incorporated and the long-term recommendations are included in the scope of this project and include the recommendation to replace all anodes that have over five years of service as recommended in the evaluation. An initial study was done during the design phase to effectively determine the life expectancy of anodes at the Idaho Nuclear Technology and Engineering Center, but the information was inconclusive. Therefore, it was decided to conduct a detailed study to run concurrent with construction to determine this analysis.

The vessels and piping in the Tank Farm contain or have contained high level radioactive liquid wastes that resulted from the chemical reprocessing of spent nuclear fuels. A structural failure of transfer lines in the Tank Farm and the Dry Fuel Storage Area could release into the soil high level radioactive wastes. These wastes contain significant amounts of mixed radioactive fission products, actinides, and Environmental Protection Agency listed hazardous and toxic chemicals. A liquid released into the soil could theoretically migrate to the groundwater below and contaminate the Snake River Plain Aquifer. Any contamination of the groundwater with high-level liquid waste would be virtually impossible to reverse and, therefore, must be viewed in terms of the negative impact on the aquifer, its entire ecosystem, and public perception thereof. In addition, any release would require the suspension of compliance agreement activities. The Settlement Agreement between the Department of Energy and the State of Idaho requires that the Tank Farm be emptied by 2012. Other underground metallic systems must remain operational until at least 2035. The Idaho Nuclear Technology Engineering Center Fire Water System provides fire protection to facilities at the Idaho Nuclear Technology Engineering Center and a loss of the system due to corrosion and leaks would result in a increased risk of life safety issues to Idaho Nuclear Technology Engineering Center facilities and personnel. An incident or failure of any

of these systems would likely cause Settlement Agreement milestones to be missed with significant legal and political repercussions at State and Federal levels.

Cathodic protection does not eliminate corrosion but merely transfers the corrosion from protected structures or piping elsewhere. In a properly working system, this corrosion occurs at the sacrificial anode which accounts for their wear while a cathodic protection system is operating. When anodes are depleted cathodic protection can be lost and the formally protected structures become unprotected, allowing corrosion to occur. A carbon steel pipe that is protected by the cathodic protection system and considered fully protected according to National Association of Corrosion Engineers criteria may be subjected to the loss of 1.4 mil of material per year. Fully protected to National Association of Corrosion Engineers means that the structure being protected meets one of the three criteria contained in National Association of Corrosion Engineers Standard RPO-169-92 for steel and cast iron piping. The majority of piping at the Idaho Nuclear Technology and Engineering Center is constructed of carbon steel. The Idaho Nuclear Technology and Engineering Center Tank Farm piping is constructed from corrosion resistant materials (stainless steel) and employs a cathodic protection system for additional corrosion protection.

All underground piping systems and structures which have a cathodic protection system must be electrically bonded (e.g., piping is connected together by a common ground). If underground structures or piping systems become unbonded from the cathodic protection system, “stray corrosion currents” can occur, resulting in a greatly accelerated corrosion rate. Past experience at the Idaho Nuclear Technology and Engineering Center has shown that stainless steel piping not bonded, while nearby cathodic protection systems are operating, failed much sooner than fully protected piping system.

This project will support the continued operation of the Tank Farm for the near future and operation of the underground utilities and dry fuel storage for the next 30 years, while maintaining compliance with the Settlement Agreement between the Department of Energy and the State of Idaho. Cathodic protection shall be provided on all underground metallic structures throughout the Idaho Nuclear Technology and Engineering Center. This protection shall be provided in accordance with the most recent edition of National Association of Corrosion Engineers International Requirement RPO-169, “Standard Recommended Practice – Control of External Corrosion on Underground or Submerged Metallic Piping Systems.”

The Cathodic Protection Center Expansion Line-Item Project will include installing reference electrode wells in the Dry Fuel Storage Area CPP-749. Use of these wells will provide accurate monitoring of CPP-749 underground metal irradiated dry fuel storage vaults. Additional anode replacements and/or new anodes may be required in this area based on the studies performed during design.

The underground fire water system at the Idaho Nuclear Technology and Engineering Center requires additional rectifiers and anodes to be added to the underground fire water system. This project will bond all piping found not connected to the present cathodic protection system.

Compliance with Project Management Order

- Critical Decision - 0: Mission Need Approved - July 28, 1998.
- First External Independent Review: Completed - August 15, 2000, by LMI.
- Critical Decision - 1: Completed - April 9, 2001.
- Second External Independent Review (Pre CD-2): Completed - August 8, 2001, by LMI.
- Critical Decision - 2: Completed - July 3, 2002.
- Critical Decision - 3: Completed - September 13, 2002.
- Critical Decision - 4: Planned for September 2004.

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase [b]		
Preliminary and final design costs (design drawings and specifications)	327	308
Design management costs (0.5% of TEC)	30	31
Project management costs (3.2% of TEC)	190	192
Total, Design Costs (9.1% of TEC)	547	531
Construction Phase		
Improvements to Land	15	15
Utilities (Cathodic Protection)	2,416	2,766
Removal cost less salvage	10	10
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	460	460
Construction management costs (11.0% of TEC)	660	660
Project management costs (7.6% of TEC)	458	458
Total, Construction Costs	4,019	4,369
Contingencies		
Design Phase (0.9% of TEC)	56	73
Construction Phase (17.1% of TEC)	1,028	1,027
Total, Contingency (18.0% of TEC)	1,084	1,100
Total, Line-Item Costs (TEC)	5,650	6,000

[a] The estimate comes from the completed Conceptual Design Project. It was prepared utilizing the INEEL Cost Estimating Guide (DOE/ID 10473). Escalation rates applied to this cost estimate are FY 2001-2.3%; FY 2002-2.4%; FY 2003-2.8%, and FY 2004-2.9% based on Anticipated Economic Escalation Rates for DOE Construction Projects.

[b] The design funds were approved in the Project Engineering and Design data sheet, Project 01-D-414 for FY 2001/FY 2002 (Subproject 01-01).

The level of confidence for completing this project for the Total Estimated Cost of $5,650,000, as identified in the Project Engineering and Design data sheet is high. The preliminary design initiated in FY 2001 verified the preliminary estimates, since the scope is well defined and standard components and subsystems will be used to upgrade existing systems.

5. Method of Performance

The Department of Energy Idaho Operations Office will be responsible for implementation of the project. DOE-Idaho project management will be performed by the Idaho Nuclear Technology and Engineering Center Programs Division personnel. Review of contractor furnished safety, environmental, and other project support will be furnished to the project on an as needed basis by the DOE-Idaho organization.

Bechtel BWXT, LLC (BBWI), as the operating contractor, will provide project management services to coordinate all project activities. BBWI will be responsible for the development of the projects technical requirements, completion of the Architectural and Engineering design, review and management of the engineering and construction activities, construction subcontracting, coordination of the activities of construction subcontractors, checkout of systems, and turnover of the completed project.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	Outyears	Total
Project Cost					
Facility Cost					
Design [a], [b]	216	385	2	0	603
Construction	0	60	2,488	2,499	5,047
Total Facility Cost	216	445	2,490	2,499	5,650
Other Project Cost					
Conceptual design costs	133	0	0	0	133
NEPA and Cathodic Alternatives Study	75	0	0	0	75
Other project-related costs	80	171	352	228	831
Total other project costs	288	171	352	228	1,039
Total, Project Costs	504	616	2,842	2,727	6,689

[a] The design costs were approved in the Project Engineering and Design data sheet, Project 01-D-414 for FY 2001/FY 2002 (Subproject 01-01).

[b] Design - The design costs are based upon the Conceptual Design Report (CDR). The conceptual design cost estimate was prepared utilizing the INEEL Cost Estimating Guide (DOE/ID 10473). Construction - The construction costs are based upon the CDR. The conceptual design cost estimate was prepared utilizing the INEEL Cost Estimating Guide (DOE/ID 10473). NEPA documentation - The NEPA costs represent operating funding which was spent in the development of the Environmental Checklist, the Environmental Assessment, and the Permit to Construct. Other project related costs funds are required to support the following activities: (1) Task Baseline Development of the Title Design; (2) development of Project Execution Plan; (3) radiation control (technical) support; (4) NEPA Documentation; (5) design and constructibility reviews; (6) operating contractor/operator project support during construction; (7) preliminary construction management planning; (8) System Operability testing; (9) decontamination costs; (10) quality level determinations; (11) development of operational procedures, testing and startup; (12) preliminary safety analyses and reports; (13) readiness reviews for startup and operations; (14) security/escorts; (15) training of operating and maintenance personnel; (16) operations support for system outages; (17) Occupational Safety Reviews and Facility Transfer; (18) Project completion reports including lessons learned; (19) financial closure of project; and (20) file transfer and records storage of completed project.

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project -- 30 years) [a]		
Annual utility costs	6	6
Annual facility operating costs	180	180
Facility maintenance and repair costs	30	30
Total related annual funding	216	216
Total operating costs (operating from 2004 through 2033)	6,480	6,480

[a] Related annual costs: Annual Facility Operating Costs – Includes operating labor costs and maintenance costs for required monthly system evaluations and documentation by facility engineer and miscellaneous other support such as supervision and administrative support. Total FTE of 1.5. Utility Costs - Addresses cover 7.5 kwh/h x 8760 x .082 $/kwh. Facility Maintenance Costs - includes the cost of 2 repairs per year @ $10K each and $5K materials.

01-D-416, Waste Treatment and Immobilization Plant
Hanford Site, Washington (ORP-0060)

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- Since submittal of the FY 2003 Congressional Request, the Department has made significant progress towards defining real risk reduction cleanup strategies at each of its sites. At Hanford, a Performance Management Plan has been developed that articulates the key milestones and commitments that accelerate risk reduction and site cleanup. Strategic Initiative 2 of the Hanford Performance Management Plan includes enhancements to the Waste Treatment and Immobilization Plant to achieve early completion of the accelerated mission and immobilize high-level radioactive waste 20 years ahead of schedule, saving up to $20,000,000,000.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2001 Budget Request *(Title I Baseline)* [a]	4Q 1998	2Q 2005	1Q 2001	1Q 2007	5,466,000	12,488,000
FY 2002 Budget Request [b]	" [c]	"	3Q 2002	"	4,350,000	4,350,000
FY 2003 Budget Request	"	"	"	"	"	"
FY 2004 Budget Request [d]	"	"	4Q 2002	"	"	"

[a] Total Project Cost/Total Estimated Cost based upon Privatization concept and included plant operations through FY 2018.

[b] The FY 2002 Total Project Cost/Total Estimated Cost based on traditional government construction contract.

[c] The A-E work initiated and funding provided under the Tank Waste Privatization Project.

[d] The cost estimate of $4,350,000 is currently under review. Plans for accelerating the cleanup of Hanford, cost increases related to contractor due diligence reviews, and additional contingency may cause this project cost to increase significantly. Upon completion of the cost estimate review, the Authorization and Appropriation Committees of both the House and Senate will be provided more details about the increase and an updated construction project data sheet.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Prior Year	393,673 [a]	393,673	393,673
2001	401,171 [b]	401,171	226,311
2002	665,000	665,000	488,469
2003	690,000 [c]	690,000	903,000
2004	690,000	690,000	790,000
2005	690,000	690,000	700,000
2006	690,000	690,000	690,000
2007	523,829	523,829	552,220
2008	0	0	0
2009	0	0	0
2010	0	0	0

3. Project Description, Justification and Scope

Radioactive waste has been stored in large underground storage tanks at the Hanford Site since 1944. Approximately 53 millions gallons of waste containing approximately 240,000 metric tons of processed chemicals and 172 mega-curies of radionuclides are currently stored in 177 tanks. These caustic wastes are in the form of liquids, slurries, saltcakes, and sludge. The Waste Treatment and Immobilization Plant will stabilize (vitrify) the waste and is critical to completion of the Hanford tank waste cleanup program by 2035.

The River Protection Project is managed by the Office of River Protection at the Hanford site in Washington State. The River Protection Project also includes efforts to resolve a number of safety concerns and technical issues. Of particular interest is addressing past leakage from some of the underground storage tanks. The leakage has resulted in contamination of the underlying ground column (vadose zone) and recent reports indicate that some of the leakage has permeated to a depth to cause contamination of the groundwater. Storage in the current tanks is very costly, and as the tanks age, potential for radioactive and chemical release will increase, although short-term risks are low. The River Protection Project will substantially decrease the long-term costs and provide protection of public health and safety and the environment by removing the waste from the tanks and placing it in a waste form suitable for long-term disposal.

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[a] Prior Years appropriated under EM Privatization account reflect $97,000,000 Congressional Rescission in the FY 2001 Appropriation. These appropriation, obligation, and cost estimates are not included in line item 01-D-416 TEC or TPC.

[b] Reflects FY 2001 Rescission of $829,000 and FY 2001 Supplemental Appropriation of $25,000,000. The original appropriation was $377,000,000.

[c] Reflects increase of $71,000,000 from original request due to FY 2003 Budget Amendment.

The River Protection Project will implement cleanup under two contract vehicles.

- < The Tank Farm Contractor will provide for safe storage and retrieval of tank wastes, storage and disposal of immobilized waste, decontamination and decommissioning of tanks, and initiation of post closure monitoring of the tank farms.
- < The Waste Treatment Contractor will design, construct, and commission a Waste Treatment and Immobilization Plant and support transition of the plant into full operation. Operation of the Waste Treatment and Immobilization Plant is planned to be under a separate contract awarded after commissioning.

The River Protection Project pathway for cleanup is documented in the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. Under the Tri-Party Agreement, the Department of Energy, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology have agreed to a timetable for cleanup of the Hanford Site. A major objective in that timetable is to immobilize approximately 10 percent of the tank waste by mass and 25 percent of the tank waste by radioactivity by 2018. The objective associated with Phase I will be met utilizing the Waste Treatment and Immobilization Plant. Phase II will accomplish immobilization of the remaining tank waste.

The Department awarded a competitively bid, non-privatized design, construction, and commissioning contract for the Waste Treatment and Immobilization Plant on December 11, 2000, a full month ahead of schedule. Bechtel National, Inc., the Waste Treatment and Immobilization Plant contractor, will continue to build upon the design initiated and developed by the prior privatization contractor. Design work entails development of all structural, mechanical, electrical, and process drawings to a degree of detail sufficient for construction. The Waste Treatment and Immobilization Plant contractor will also commission the plant, demonstrating treatment of a small portion of the Hanford tank wastes.

Prior to or during commissioning, the Department will award a separate contract to operate the Waste Treatment and Immobilization Plant, and treat and immobilize approximately 10 percent of the Hanford tank waste by mass and 25 percent by radioactivity by 2018. The Plant will continue to operate to assist in the completion of the treatment of all Hanford tank waste by 2028.

The Waste Treatment and Immobilization Plant Contractor will: complete process and facility design; perform construction and procurement; conduct acceptance testing; select and integrate a subcontractor into the project team to provide the necessary operability and commissioning capability; and conduct all required environmental, safety, quality, and health actions. From contract award, the Waste Treatment and Immobilization Plant Contractor will be the design authority responsible for the design of the Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant Complex currently consists of five major facilities: Pretreatment facility, Low Activity Waste Vitrification facility, High-Level Waste Vitrification facility, Analytical Laboratory, and the Balance of Facilities. The Pretreatment facility will separate the Hanford feed waste into low-level and high-level fractions. The high-level fraction is sent to the High-Level Waste Vitrification facility for immobilization (i.e., into glass), ready for disposal at a national geologic repository. The low-level fraction is sent to the Low Activity Waste Vitrification facility for immobilization, ready for disposal at the Hanford Site. The laboratory will provide real-time analytical

support for plant operations. Office facilities, chemical storage, site utilities, and infrastructure (e.g. steam plant, power distribution center, etc.) are provided as part of the Balance of Facilities.

Schedule performance is an important consideration for the River Protection Project, and specifically the Waste Treatment and Immobilization Plant. The Waste Treatment and Immobilization Plant contract includes several key milestones, including completion of hot commissioning by January 2011. The Department will seek to accelerate this schedule by providing contractor fee incentives to optimize life-cycle performance, cost, and schedule, including the process design, facility design, and technologies. The Department expects to complete Hot Commissioning by January 2010. The current Waste Treatment and Immobilization Plant design provides a reference solution that meets project requirements, but has significant potential for optimization.

This project has a contractor Engineering, Procurement, Construction and Commissioning contingency of $300,000,000. This contingency is based on a risk assessment of design maturity, work complexity and project uncertainties. The assessment included consideration of factors such as changes as a result of design maturity, weather, unknown interferences, longer project duration, and schedule conflicts.

The FY 2004 appropriation request of $690,000,000 will be used to continue detailed design, engineering, long-lead procurement, planning, and continue construction and begin startup and commissioning activities for some support facilities.

For FY 2004, the Waste Treatment and Immobilization Plant will reach 75 percent of its detailed design, complete major risk mitigation actions, including ultra filtration and resin performance testing, pulse jet mixer effectiveness and melter testing and modeling. Major procurements will be placed for High-Level Waste Melter materials and equipment. Construction progress will be significant, with continued placement of up to 45 percent (total 240,000 cubic yards) of structural concrete; installation of the first 15 percent (total 21,000 tons) of structural steel; installation of the first 15 percent (of a total of 3,760,000 pounds) of Heating, Ventilation, Air Conditioning ductwork. Construction of the Analytical Laboratory will have been started by the end of the fiscal year. Component testing will begin on many of the support facilities including the switchgear building, water treatment plant and simulator building. The cost estimate currently under review is based on a completely revised estimate submitted by Bechtel National, Inc., in May 2002. Upon completion of the cost estimate review, the Authorization and Appropriation Committees in both the House and Senate will be provided an updated construction project data sheet.

4. Details of Cost Estimate

	(dollars in thousands) Current Estimate	Previous Estimate
Design Phase (Design/Build)		
Engineering, Research and Technology, and Environment, Safety and Health	$638,644	$638,644
Construction Phase		
Buildings	2,233,911	2,233,911
Commissioning Costs		
Pre, Cold, and Hot Commissioning	396,603	396,603
Project Management and Support	346,075	346,075
Total Design, construction, commissioning, and project management	3,965,000	3,965,000
Contingency	300,000	300,000
Contractor fee	335,000	335,000
Contract Subtotal	4,300,000	4,300,000
DOE contingency and Technical and Programmatic Risk Assessment	0	0
Interim contractor operations during transition from Privatization	50,000	50,000
TOTAL	$4,350,000	$4,350,000

5. Method of Performance

Schedule performance is an important requirement for the Waste Treatment and Immobilization Plant Contract. The Waste treatment and Immobilization Plant Contract includes several key milestones, including completion of hot commissioning by January 2011. The Department will seek to improve the Waste Treatment and Immobilization Plant schedule by incentivizing the Contractor to optimize life-cycle performance, cost, and schedule, including the process design, facility design, and technologies. The Waste Treatment and Immobilization Plant Conceptual Design provides a reference solution that appears to meet project requirements, but has significant potential for optimization.

The project has currently met the intent of DOE Order 413.3 requirements for Critical Decisions 0, 1, and 2. Critical Decisions 0 and 1, which established the need for waste treatment capability and the design approach, were completed under the former privatization approach. The requirement for Critical Decision 2, which establishes needed confidence in the design and cost estimate to permit final design and construction to move forward, was met during the process of selecting a contractor to complete design, construction, and commissioning of the Waste Treatment and Immobilization Plant. Critical Decisions 3a and 3b were approved in FY 2002 which authorized site preparation and initiated project construction. Critical Decision 3c, approval and authorization to complete construction, is planned for the spring of 2003.

Further, the Department of Energy has funded and completed an External Independent Review of the project's readiness to continue construction of the project facilities (Critical Decision 3c). The technical requirements of the project have been determined through evaluation of waste characteristics and performance of ongoing research and development activities to mitigate potential project risks. An external review of the technologies to be used in the Waste Treatment and Immobilization Plant was

also performed. Results indicated that the Department is proceeding down a prudent technological path for treating the wastes. The contract contains numerous incentives to assure the contractor meets cost and schedule requirements and a large portion of the incentive fee is associated with the successful commissioning and hot start of the facility.

The contract milestones and current contractor forecast milestones for the project are included in Table 5.1.

Table 5.1

Treatment and Immobilization Milestones

Milestone Title	Date
Contract Milestones	
Start of Construction	July 10, 2002 **A**
Start of Cold Commissioning	February 12, 2007
Completion of Acceptance Testing	November 30, 2007
Start of Hot Commissioning	December 31, 2007
Completion of Hot Commissioning	January 31, 2011
Completion of Contract Requirements	July 31, 2011
Current Forecast Milestones	
Start Construction of the Pretreatment Facility	Nov. 26, 2002 **A**
Start Construction of the High-Level Waste Facility	July 10, 2002 **A**
Start Construction of the Low Activity Waste Facility	July 10, 2002 **A**
Complete Design of the Pretreatment Facility	March 1, 2005
Complete Design of the Low Activity Waste Facility	November 24, 2004
Complete Design of the High-Level Waste Facility	February 28, 2005
Complete Construction - Low Activity Waste	December 1, 2005
Complete Construction - Pretreatment	May 31, 2006
Complete Construction - High-Level Waste	March 17, 2006
Initiate Pretreatment Hot Start	August 1, 2007
Initiate Low Activity Waste Treatment Hot Start	October 30, 2007
Initiate High-Level Waste Treatment Hot Start	November 8, 2007
Complete Hot Commissioning (project end state)	January 31, 2010

A = Actual Date

* The forecast milestones reflect an accelerated contractor schedule, which allows some delay while being supportive of the contract milestone dates.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project cost						
Facility cost						
Design	176,311	343,112	335,003	211,427	317,039	1,382,892
Construction	0	138,415	556,497	565,473	1,049,952	2,310,337
Total facility costs (Federal and Non-Federal)	176,311	481,527	891,500	776,900	1,366,991	3,693,229
Other project costs						
Conceptual design cost	0	0	0	0	0	0
Other costs	50,000	6,942	11,500	13,100	575,229	656,771
Subtotal	50,000	6,942	11,500	13,100	575,229	656,771
Total project costs (TPC)	226,311	488,469	903,000	790,000	1,942,220	4,350,000

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc.) [a]	114,000	114,000
Annual facility maintenance and repair costs	TBD	TBD
Other annual costs	TBD	TBD
Total related annual funding (from end of commissioning in FY 2010)	114,000	114,000

[a] The total operating costs for all facilities that constitute the Waste Treatment and Immobilization Plant are included in this estimate. This estimate includes maintenance, repair and other annual costs.

03-D-403, Immobilized High Level Waste Interim Storage Facility, Richland, Washington (ORP-0014)

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 2003 Budget Request *(Preliminary Estimate)*	4Q 2001	3Q 2004	3Q 2004	4Q 2006	61,150	70,400

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2003	6,363	6,363	6,363
2004	13,954	13,954	13,954
2005	22,216	22,216	22,216
2006	14,764	14,764	14,764
2007	3,853	3,853	3,853

3. Project Description, Justification and Scope

The Immobilized High Level Waste Interim Storage Facility Project will provide temporary storage for high level waste canisters produced by the Waste Treatment and Immobilization Plant until they can be shipped offsite for permanent disposal in a geologic repository. The end state is achieved in 2035 when the waste in the 177 underground storage tanks is stabilized, and the tank farms, ancillary facilities, the Waste Treatment and Immobilization Plant, and disposal facilities are closed. To achieve this end state, 1) construction of the retrieval and transfer systems needs to be completed, 2) the tank waste needs to be treated through the Waste Treatment and Immobilization Plant or other supplemental treatment, 3) the high level waste canisters need to be temporarily stored before permanent disposal in a geologic repository, 4) the low-activity waste needs to be disposed, and 5) all the facilities need to be closed. This project will provide for item 3 above.

The Immobilized High Level Waste Interim Storage Facility Project will install systems, structures, and components to enable receipt and storage of high level waste canisters produced by the Waste Treatment and Immobilization Plant. Vault 1 of the Canister Storage Building provides for interim storage of Spent Nuclear Fuel; this project will outfit vaults 2 and 3 for interim storage of the first 880 canisters of immobilized high level waste. The project also includes a system for transporting canisters from the Waste Treatment and Immobilization Plant to the Canister Storage Building. This project will design, procure, and install 220 storage tubes approximately 41 feet tall and 28 inches in diameter in each vault. The vaults will have independent intake (approximately 80 feet high) and exhaust structures (approximately 164 feet) designed and constructed for convection cooling of the canisters. It will also modify the existing equipment in the Canister Storage Building to receive the canisters from the Waste Treatment and Immobilization Plant. The project will also provide 440 standard storage tubes with shield plugs and covers for the canisters. New exhaust stacks and intakes for each vault will be added. Finally, the project will provide two cask and trailers for shipment from the Waste Treatment and Immobilization Plant to the Canister Storage Building.

The FY 2004 budget request will be used to initiate procurement, start construction, initiate final safety analysis documentation, and provide project integration. The FY 2004 budget request supports meeting the established project milestones identified in the Hanford Federal Agreement and Consent Order (Tri-Party Agreement).

Critical Decision 0, Approved Mission Need, was completed in December 1996 through the Energy Systems Acquisition Review Process with DOE/HQ approval. The Conceptual Design Report for the project was completed in April 1998. Critical Decision 0 and the Conceptual Design Report were completed under DOE 0430.1A. Validation of the FY 2001 budget request occurred May 25, 1999, and is cited as Critical Decision 1. An External Independent Review final report issued on May 5, 2000. Remaining Critical Decisions will be completed under the requirements of DOE 0413.3.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Construction Costs		
Buildings and improvements to land	16,080	23,165
Specialized equipment	24,310	39,540
Other (major utilities/comp items, specialized facilities, etc.)	0	0
Removal cost less salvage	0	0
Project management	3,470	2,600
Inspection, design and project liaison, testing, checkout and acceptance	5,450	6,170
Construction management	3,990	4,030
Subtotal, construction costs	53,300	75,505
Contingencies		
Construction phase	7,850	4,800
Subtotal, contingencies	7,850	4,800
Total, facility costs	61,150	80,305
Other Project Costs		
Conceptual design	0	0
NEPA	0	0
Other project costs	9,250	9,836
Subtotal, other project costs	9,250	9,836
Total Project Cost	70,400	90,141

5. Method of Performance

The CH2M-Hill Hanford Group will manage the project for the Office of River Protection. A design agent from the onsite Architect/Engineer pool will perform preliminary design and engineering and inspection during the construction of the Immobilized High Level Waste Interim Storage Facility Project. Detailed design and construction will be performed by a competitively selected Architect-Engineer/Construction Manager with fixed-price contracts utilized to the maximum extend possible.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project cost						
Facility cost						
Construction	0	0	6,363	13,954	40,833	61,150
Total facility costs (Federal and Non-Federal)	0	0	6,363	13,954	40,833	61,150
Other project costs						
Conceptual design cost	0	0	0	0	0	0
NEPA documentation costs	0	0	0	0	0	0
Other project-related costs	0	0	685	190	8,375	9,250
Total other project costs	0	0	685	190	8,375	9,250
Total project costs (TPC)	0	0	7,048	14,144	49,208	70,400

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs (staff, utilities, etc)	3,071	2,655
Annual facility maintenance and repair costs	0	0
Other annual costs	0	530
Total related annual funding	3,071	3,185

03-D-414, Environmental Management, Project Engineering and Design (PED), Various Locations

Significant Changes

- This project received funding from the FY 2003 Budget Amendment to initiate two subprojects: Additional Glass Waste Storage Building ($1,300,000) and the Salt Waste Processing Facility Alternative ($7,500,000). Only the Salt Waste Processing Facility Alternative is requesting line item funding in FY 2004 to continue design.

1. Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2003 Congressional Amendment *(Preliminary and Final Design Only)*	1Q 2003	4Q 2004	4Q 2003	4Q 2007	73,703
FY 2004 Budget Request	"	"	"	"	70,300

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2003	8,800	8,800	8,800
2004	51,500	51,500	51,500
2005	10,000	10,000	10,000

3. Project Description, Justification and Scope

This construction project data sheet summarizes the Environmental Management requirements for architect-engineering services, preliminary design, and final design for the Salt Waste Processing Facility Alternative project. This data sheet includes one project which will continue design in during FY 2004. The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules including procurements.

The FY 2001 Energy and Water Development Appropriations Act supports Departmental requests for "project engineering and design" funds for the purpose of achieving a 30-35 percent level of engineering design for new construction projects prior to requesting construction funding. Such an advanced design should provide a more mature technical and cost baseline, ensuring greater likelihood of achieving project cost and schedule adherence.

The project baseline will be the basis for the request to Congress for authorization and appropriation for physical construction and procurement. For certain projects, in order to meet project schedules, construction and/or procurement activities may be required in the same year as the preliminary design, Project Baseline and Acquisition Executive approval is completed. For those projects, a report will be provided to Congress with the results of preliminary design, project baseline, external independent reviews and acquisition executive approval. Long-lead procurement and/or construction start will not proceed until 30 days after the report has been submitted to Congress. Each project that proceeds to physical construction will be separated into an individual construction line-item, the total estimated cost of which will identify the costs of the engineering and design activities funded through the project engineering and design account.

4. Details of Cost Estimate (Total PED)

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase [a]		
Preliminary and Final Design Costs (Design Drawings and Specifications)	64,100	N/A
Design Management Costs	2,800	N/A
Project Management Costs	3,400	N/A
Total, Design Costs	70,300	N/A

5. Method of Performance

Please refer to the individual subprojects for contract strategies.

[a] The Design Management and Project Management Costs are estimates based on historical records and are preliminary estimates.

6. Schedule of Project Funding (Total PED)

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Facility Cost						
Design	0	8,800	51,500	10,000	0	70,300
Other Project Costs [a]						
Conceptual Design Cost	19,385	20,250	7,500	2,500	0	49,635
NEPA Documentation Costs	82	0	0	0	0	82
Other Project-Related Costs	0	1,697	0	0	0	1,697
Total, Other Project Costs	19,467	21,947	7,500	2,500	0	51,414
Total, Project Cost	19,467	30,747	59,000	12,500	0	121,714

FY 2004 Proposed Design Projects

03-02, Salt Waste Processing Facility Alternative (SR-0014C), Savannah River Site, Aiken, South Carolina

Fiscal Quarter				Total Estimated Cost (Design Only $000)	Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction			
		Start	Complete		
1Q 2003	3Q 2005	3Q 2005	2Q 2009	69,000	80,967

Fiscal Year	Appropriation	Obligations	Costs
2003	7,500	7,500	7,500
2004	51,500	51,500	51,500
2005	10,000	10,000	10,000

Nuclear materials production operations at the Savannah River have resulted in the generation of large quantities of radioactive waste which meets the DOE Order 435.1 definition of high-level waste. Approximately 37,000,000 gallons of high-level waste is being stored on an interim basis in 49 underground waste storage tanks. Of the 37,000,000 gallons of high-level waste, approximately 3,000,000 gallons are sludge waste and approximately 34,000,000 gallons are salt waste, of which 16,500,000 gallons of solid saltcake and 17,500,000 gallons of salt supernate. Waste volumes are subject to change because the supernate is evaporated to reduce its volume, sludge is being removed for

[a] The other project costs include support for work package processing, waste characterization, facility design reviews, temporary modification design and control, and support of facility activities related to the project.

processing and vitrification, and new waste is being transferred to the high-level waste tanks. Continued, long-term storage of this liquid waste in underground tanks poses an environmental risk.

To comply with state and federal regulatory agreements, all high-level waste tanks must be empty by 2028. The Department built the Defense Waste Processing Facility to vitrify high-level waste in a stable form and store it for eventual disposal in a geologic repository. The ability to safely process the salt component of the high-level waste stored in underground storage tanks at Savannah River is a crucial prerequisite for completing high-level waste disposal. Without a suitable method for salt management, the Department would not be able to place the high-level waste in a configuration acceptable for safe disposal. Processing salt waste through the Salt Waste Processing Facility Alternative is planned to begin by 2009 in order to provide reasonable schedule contingency for maintaining adequate tank space required to support Defense Waste Processing Facility operations, expedite processing of high-level waste consistent with the current strategy, and ensure the site meets its Federal Facilities Agreement commitments for waste tank disposition.

This project will design, construct, and commission the Salt Waste Processing Facility Alternative to safely separate the high-activity fraction from the low-activity fraction of the high-level radioactive salt waste stored in underground tanks at Savannah River. The Department has selected Caustic-Side Solvent Extraction as the preferred technology for separation of radioactive cesium from the salt wastes. Salt Waste Processing Facility Alternative processing also includes a separation step to remove soluble strontium, uranium, plutonium and neptunium from the waste by sorption onto granular monosodium titanate followed by filtration. The Salt Waste Processing Facility Alternative will be a reduced scale expandable facility.

The objectives of the Salt Waste Processing Facility Alternative are to demonstrate Caustic-Side Solvent Extraction and actinide removal technologies through pilot testing, gain processing capacity through small-scale deployment, and accelerate initiation of waste treatment. Commissioning of a smaller scale facility is intended to demonstrate the technology and gain processing capability with a much smaller commitment of funds than would be required for a full-scale facility. The Salt Waste Processing Facility Alternative will be designed to be expandable. During project execution, the Department will determine how much, if any, additional salt waste processing capability is needed to meet Savannah River regulatory commitments and to ensure coupled salt/sludge feed to the Defense Waste Processing Facility. The need for additional salt waste processing capability will depend upon the success of the efforts to disposition low source term salt waste. Facilities or additional process trains to provide this additional capability may be designed and constructed as a separate project.

The Salt Waste Processing Facility Alternative will consist of all buildings, equipment, and services required to provide a fully functional facility for processing salt waste. The Salt Waste Processing Facility Alternative will contain necessary process areas, service areas, chemical storage areas, and administrative areas. The process building will contain shielded processing cells and chemical processing equipment. In-cell tanks and components will be of a design for ease of maintenance, replacement, and later decommissioning. The operating area will contain chemical feed pumps and tanks, hot and cold laboratories for testing samples, electrical and mechanical equipment areas, truck unloading area, and maintenance and decontamination areas. The chemical storage area will be located near the process building and will contain chemical storage tanks. Service and administrative spaces will be sized as required to accommodate the process facility. The facility will be expandable to accommodate potential future additional processing capacity.

A formal technical and programmatic risk assessment has been performed. The risk assessment concluded that the technical and programmatic risks are manageable. An ongoing technology development program is necessary in order to mitigate remaining technical uncertainties. The integrated project team is currently continuing technology development for Caustic-Side Solvent Extraction and strontium/actinide removal and filtration. Additional technology development needed to support backup technologies may also be conducted in the future if required for risk mitigation. Programmatic risk is mitigated with the current project strategy to construct a smaller scale facility. The smaller scale facility, which will provide technology demonstration as well as limited production capability, requires less funding than the full-scale facility.

The project acquisition strategy includes the use of two separate contractors to perform conceptual design, which reduces project risk. The use of two contractors will enhance technology deployment, optimize design and will result in increased competition. Both contractors will identify and manage technical and program risks through completion of conceptual design. Following completion of conceptual design, the Department will select one of the two contractors to perform preliminary and final design, construction, commissioning, and one year of operations.

The Savannah River Site Federal Facilities Agreement and Site Treatment Plan require production of (on average) 200 high-level waste canisters per year at the Defense Waste Processing Facility. In order to minimize total canister production and avoid future shutdowns or slowdowns of the Defense Waste Processing Facility, a coupled feed (both sludge and salt) must be established and maintained. At this time, the Salt Waste Processing Facility Alternative is critical to establishing the coupled feed. FY 2004 Project Engineering and Design funds are required in order to support acceleration of design and allow for subsequent accelerated processing of salt waste through the Salt Waste Processing Facility Alternative.

Compliance With Project Management Orders

- Critical Decision - 0: Mission Need approved June 2001.
- Critical Decision - 1: Preliminary Baseline Range to be approved September 2003.
- Critical Decision - 2: Approve Performance Baseline to be approved June 2004.
- External Independent Review: Planned for June 2004.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design phase		
Preliminary and Final Design Costs (Design Drawings and Specifications)	62,800	N/A
Design Management Costs	2,800	N/A
Project Management Costs	3,400	N/A
Total, Design Costs	69,000	N/A

The Design Management and Project Management Costs are preliminary estimates based on historical records. They were developed using a parametric approach due to the limited design information available at the Pre-conceptual stage of this project. The parametric approach uses data from other projects at Savannah River similar in nature. Therefore, there is a moderate confidence level in the estimate.

5. Method of Performance

Design services will be obtained through a competed contract with an Engineering, Procurement, and Construction contractor. A Cost-Plus-Incentive Fee contract is being considered. However, the exact type of contract will be established during contract negotiations. Management and Operating contractor staff will be involved in areas concerning high-level waste system interfaces, feed and product specification, security, etc.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Facility Cost						
PED	0	7,500	51,500	10,000	0	69,000
Other Project Costs [a]						
Conceptual Design Cost	11,885	0	0	0	0	11,885
NEPA Documentation Costs	82	0	0	0	0	82
Other Project-Related Costs	0	0	0	0	0	0
Total, Other Project Costs [b]	11,967	0	0	0	0	11,967
Total, Project Costs (TPC)	11,967	7,500	51,500	10,000	0	80,967

[a] OPC costs start with approval of Critical Decision 0 on June 25, 2001.

[b] Additional funding for research and development activities in support of technology development for the Salt Waste Processing Facility Alternative has been provided by Technology Development and Deployment (EM-50).

04-D-408, Glass Waste Storage Building #2, Savannah River Site, Aiken, South Carolina (SR-0014C)

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 2003 Congressional Amendment *(Preliminary Baseline Estimate)*	3Q 2003	2Q 2004	1Q 2004	2Q 2006	86,000	90,800
FY 2004 Congressional Request *(Preliminary Baseline Estimate)*	1Q 2003	3Q 2003	3Q 2003	2Q 2006	86,000	90,800

2. Financial Schedule [a]

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Cost
2004 [a]	20,259	20,259	20,259
2005	65,741	65,741	65,741

3. Project Description, Justification and Scope

Highly radioactive liquid waste is currently stored in F and H area tank farms at the Savannah River Site. The Defense Waste Processing Facility converts this highly radioactive liquid waste by vitrification to a less mobile and more stable form borosilicate glass. This protects the biosphere against unacceptable release of radionuclides. The vitrified waste is sealed in stainless steel canisters by the Defense Waste Processing Facility process and then transported to the Glass Waste Storage Building for storage until it can be transferred to the Federal repository. The original Defense Waste Processing Facility design and regulatory documentation included provisions for a total of three identical Glass Waste Storage Buildings at the Savannah River Site. Only one Glass Waste Storage Building was constructed as part of the original project with two more identical Glass Waste Storage Buildings to follow at intervals determined from the resultant Defense Waste Processing Facility production rates.

The existing Glass Waste Storage Building currently has approximately 850 storage locations remaining and will be filled to capacity in FY 2006 based on the currently planned Defense Waste Processing

[a] Excludes FY 2003 PED funds of $1,300,000 appropriated on Project 03-D-414.

Facility production. If project implementation does not begin in FY 2003, Defense Waste Processing Facility will be stopped in FY 2006 for lack of approved storage facilities.

This project includes the procurement of a Design/Build Contractor for design, construction, and start up of an additional four vault Glass Waste Storage Building # 2 to provide needed additional radioactive glass waste canister storage in FY 2006. Glass Waste Storage Building# 2 will replicate the existing Glass Waste Storage Building design (i.e. latest design configuration reflecting any approved modifications and updated building code requirements). This approach will minimize project risk.

The project schedule provides for 5 months to prepare and issue a design/build bid package, 6 months for bid and award of the subcontract, and a 32-month construction/testing/turnover schedule.

The project will be conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

Compliance with Project Management Order

- Critical Decision - 0: Approve Mission Need – 3Q 2002
- Critical Decision - 1: Approve Preliminary Baseline Range – 2Q 2003
- Critical Decision - 2: Approve Performance Baseline – 3Q 2003
- Critical Decision - 3: Approve Start of Construction – 2Q 2004
- Critical Decision - 4: Approve Start of Operations – 4Q 2006

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Construction Phase		
Construction Management (2.4% of TEC)	2,100	2,100
Project Management (3.7% of TEC)	3,200	3,200
Subcontract (82% of TEC)	71,300	71,300
Total, Construction Costs	76,600	76,600
Contingencies		
Construction Phase	9,400	9,400
Total, Contingencies	9,400	9,400
Total, Line-Item Costs (TEC)	86,000	86,000
Other Project Costs		
Other Project Costs	4,800	4,800
Subtotal, other project costs	4,800	4,800
Total Project Cost	90,800	90,800

5. Method of Performance

The acquisition strategy is to utilize a single fixed price construction contract for a green field type of construction project. The services will be provided under a Design/Build Fixed Price Subcontract. The Subcontractor, in accordance with the procurement specification, will provide all detailed design, equipment, material, labor and testing necessary to turn a operational facility over to Westinghouse Savannah River Company. All materials currently estimated to be used on this project are common and readily available. No long lead times are anticipated. The Savannah River Site Management and Operations will be responsible for procurement and management of the design/build subcontractor.

The project schedule must include, at a minimum, bid package preparation, evaluation of bids and award of design/build contract in FY 2003 to support operations in FY 2006.

The project will be conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

6. Schedule of Project Funding

(dollars in thousands)

	FY 2003	FY 2004	Outyears	Total
Project Cost				
Facility Cost				
Construction	0	20,259	65,741	86,000
Total Contract Costs	0	20,259	65,741	86,000
Other Project Costs				
R&D necessary to complete project	0	0	0	0
Conceptual Design Costs	0	0	0	0
Other Project-Related Costs	1,697	1,453	1,650	4,800
Total Other Project Costs	1,697	1,453	1,650	4,800
Total, Project Costs	1,697	21,712	67,391	90,800

7. Related Annual Funding Requirements

(dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	190	N/A
Annual facility maintenance and repair costs	140	N/A
Annual Utility Costs	170	N/A
Total related annual funding *(operating from FY 2006 through FY 2026)* [a]	500	N/A

[a] Annual costs in FY 2002 dollars.

Safeguards and Security

Mission Supporting Goals and Measures

The Environmental Management domestic Safeguards and Security program ensures appropriate levels of protection against: unauthorized access, theft, diversion, loss of custody or destruction of DOE assets and hostile acts that may cause adverse impacts on fundamental national security or the health and safety of DOE and contractor employees, the public or the environment. Funding is provided for EM's landlord sites, specifically Savannah River (except the Tritium facilities), Richland, Carlsbad/Waste Isolation Pilot Plant, Rocky Flats, Miamisburg, Fernald, West Valley Demonstration Project, East Tennessee Technology Park, Paducah Gaseous Diffusion Plant, and the Portsmouth Gaseous Diffusion Plant.

These critical sites are secured by multiple layers of security measures. Each site has a specifically designed Safeguards and Security Plan or a facility Master Security Plan, as well as Cyber Security Plan addressing the protection planning for DOE interests to include: classified information, nuclear weapons components, and special nuclear materials. In addition, Personnel Security Programs insure the continuing reliability of employees having access to classified matter at all EM sites.

The following is a brief description of the type of activities performed:

Protective Forces

Protective Forces are the Special Police Officers and other specialized personnel that directly provide security at EM sites. Funding is requested to provide an appropriately sized force with adequate materials, supplies, equipment, facilities, training, vehicles and other required equipment to meet site security objectives.

Physical Security Systems

Security Systems provide intrusion detection and assessment as required by DOE Orders; physical barriers, secure storage, an armed Protective Force, alarms, and closed-circuit televisions are utilized to protect classified matter; ingress and egress controls, explosive detection, and other inspection resources are used to ensure proper access authorization; and performance testing of security posture according to the approved site performance testing plan is conducted to ensure the proper level of risk is being accepted.

Information Security

Information Security provides information protection, classification and declassification of classified and sensitive unclassified information, critical infrastructure which includes alarm systems and automated process control systems, technical security countermeasures and operations security.

Personnel Security

Personnel Security encompasses the processes for administrative determination that an individual is eligible for access to classified matter, or is eligible for access to, or control over, special nuclear material. Also includes maintaining security education and awareness programs for DOE and DOE contractor employees. Security investigation activities performed by the Federal Bureau of Investigation and the Office of Personnel Management associated with access authorizations is funded by the Office of Security.

Material Control and Accountability

Material Control and Accountability provides for implementation of systems and procedures needed to address proper material inventory integrity, maintaining effective material access, data and equipment access, and maintaining material accounting policy requirements and assuring inventories are properly located, identified and quantified and appropriately stored.

Program Management

Program Management provides policy oversight and administration, planning, training, and development for the site's overall security program.

Cyber Security

The EM Cyber Security provides adequate protection for the processing, storing, or transmission of classified computer/telecommunications information, processes, methods, and tools to support certification and accreditation of secure and sensitive enterprise networks, to ensure that all DOE unclassified information resources are identified and protected in a manner consistent with the site's mission and possible threats.

Subprogram Goals

The goal of the Safeguards and Security program is to provide adequate protection while meeting mission responsibilities in a technically sound and cost-effective manner. The EM program will:

- Protect classified information and assets in order to safely and expeditiously manage waste; cleanup facilities and the environment, and stabilize and store nuclear material and spent nuclear fuel.

Performance Indicators

- Ensure operations at EM sites meet security standards.
- Ensure EM's personnel, programs and information are protected from the foreign intelligence threat.
- Implement the Integrated Safeguards and Security Management Program.
- Prevent unauthorized cyber intrusions.

Annual Performance Results and Targets

	FY 2002 Actuals	FY 2003 Estimate	FY 2004 Estimate
There are no quantifiable corporate performance measures associated with this account.			

Significant Program Shifts

In FY 2004:

- all safeguards and security related activities associated with Idaho/Idaho National Engineering and Environmental Laboratory and Chicago/Argonne National Laboratory-West have been transferred to the Office of Nuclear Energy.

Detail Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Carlsbad Field Office/Waste Isolation Pilot Plant					
Protective Forces	2,621	2,388	3,153	765	32.0%
Information Security	0	0	129	129	0.0%
Personnel Security	0	0	21	21	0.0%
Program Management	118	118	120	2	1.7%
Subtotal, Physical Security	2,739	2,506	3,423	917	36.6%
Cyber Security	0	0	38	38	0.0%
Total, Carlsbad Area Office	2,739	2,506	3,461	955	38.1%
Oak Ridge/East Tennessee Technology Park					
Protective Forces	7,224	7,866	11,570	3,704	47.1%
Physical Security Systems	1,207	1,408	1,615	207	14.7%
Information Security	965	950	1,074	124	13.1%
Personnel Security	416	423	394	-29	-6.9%
Material Control and Accountability	761	934	900	-34	-3.6%
Program Management	287	714	605	-109	-15.3%
Subtotal, Physical Security	10,860	12,295	16,158	3,863	31.4%
Cyber Security	724	869	1,004	135	15.5%
Total, Oak Ridge/East Tennessee Technology Park	11,584	13,164	17,162	3,998	30.4%
Ohio/Fernald					
Protective Forces	3,912	2,369	3,598	1,229	51.9%
Material Control and Accountability	542	202	202	0	0.0%
Subtotal, Physical Security	4,454	2,571	3,800	1,229	47.8%
Cyber Security	247	319	145	-174	-54.5%
Total, Ohio/Fernald	4,701	2,890	3,945	1,055	36.5%

	(dollars in thousands)				
	FY 2002	FY 2003	FY 2004	$ Change	% Change
Ohio/Miamisburg					
Protective Forces	3,061	2,653	2,404	-249	-9.4%
Physical Security Systems	1,083	572	226	-346	-60.5%
Information Security	459	388	266	-122	-31.4%
Personnel Security	182	201	181	-20	-10.0%
Material Control and Accountability	64	63	52	-11	-17.5%
Program Management	546	413	390	-23	-5.6%
Subtotal, Physical Security	5,395	4,290	3,519	-771	-18.0%
Cyber Security	383	388	374	-14	-3.6%
Total, Ohio/Miamisburg	5,778	4,678	3,893	-785	-16.8%
Ohio/West Valley					
Protective Forces	1,065	1,062	1,310	248	23.4%
Program Management	560	546	600	54	9.9%
Subtotal, Physical Security	1,625	1,608	1,910	302	18.8%
Cyber Security	620	602	660	58	9.6%
Total, Ohio/West Valley	2,245	2,210	2,570	360	16.3%
Paducah					
Protective Forces	2,755	3,975	4,485	510	12.8%
Physical Security Systems	219	787	531	-256	-32.5%
Information Security	706	1,111	1,138	27	2.4%
Personnel Security	83	265	272	7	2.6%
Material Control and Accountability	206	276	283	7	2.5%
Program Management	134	435	284	-151	-34.7%
Subtotal, Physical Security	4,103	6,849	6,993	144	2.1%
Total, Paducah	4,103	6,849	6,993	144	2.1%
Portsmouth					
Protective Forces	9,985	9,584	12,615	3,031	31.6%
Physical Security Systems	104	143	146	3	2.1%
Information Security	513	687	1,821	1,134	165.1%
Personnel Security	93	254	259	5	2.0%
Material Control and Accountability	520	630	643	13	2.1%
Program Management	414	604	617	13	2.2%
Subtotal, Physical Security	11,629	11,902	16,101	4,199	35.3%
Cyber Security	17	15	15	0	0.0%
Total, Portsmouth	11,646	11,917	16,116	4,199	35.2%

	(dollars in thousands)				
	FY 2002	FY 2003	FY 2004	$ Change	% Change
Richland Operations Office					
Protective Forces	25,085	25,017	34,456	9,439	37.7%
Physical Security Systems	6,061	6,508	6,469	-39	-0.6%
Information Security	4,000	3,828	2,147	-1,681	-43.9%
Personnel Security	2,680	2,875	4,938	2,063	71.8%
Material Control and Accountability	2,540	2,882	2,912	30	1.0%
Program Management	12,128	11,950	17,587	5,637	47.2%
Subtotal, Physical Security	52,494	53,060	68,509	15,449	29.1%
Cyber Security	2,350	1,594	4,598	3,004	188.5%
Total, Richland Operations Office	54,844	54,654	73,107	18,453	33.8%
Rocky Flats Field Office					
Protective Forces	25,367	14,799	11,211	-3,588	-24.2%
Physical Security Systems	870	588	741	153	26.0%
Information Security	1,740	1,637	2,719	1,082	66.1%
Personnel Security	2,175	2,029	2,659	630	31.1%
Material Control and Accountability	6,089	4,706	7,619	2,913	61.9%
Program Management	5,915	4,127	2,137	-1,990	-48.2%
Subtotal, Physical Security	42,156	27,886	27,086	-800	-2.9%
Cyber Security	1,740	1,707	1,464	-243	-14.2%
Total, Rocky Flats Field Office	43,896	29,593	28,550	-1,043	-3.5%
Savannah River Operations Office					
Protective Forces	57,250	48,138	70,935	22,797	47.4%
Physical Security Systems	13,178	11,758	31,875	20,117	171.1%
Information Security	1,495	2,363	2,363	0	0.0%
Personnel Security	3,947	3,623	4,050	427	11.8%
Material Control and Accountability	4,093	3,978	4,809	831	20.9%
Program Management	20,589	21,069	27,549	6,480	30.8%
Subtotal, Physical Security	100,552	90,929	141,581	50,652	55.7%
Cyber Security	2,273	2,224	2,599	375	16.9%
Total, Savannah River Operations Office	102,825	93,153	144,180	51,027	54.8%
Subtotal, Defense Safeguards and Security	244,361	221,614	299,977	78,363	35.4%
Less: Security Charge for Reimbursable Work	-1,547	-1,344	-1,344	0	0.0%
Total, Defense Site Acceleration Completion, Safeguards and Security	242,814	220,270	298,633	78,363	35.6%

Detailed Program Justification

(dollars in thousands)

FY 2002	FY 2003	FY 2004

CB-0020 / Safeguards and Security - Waste Isolation Pilot Plant (life-cycle estimate $162,819K) 2,739 2,506 3,461

The Safeguards and Security Program ensures appropriate levels of protection for the Carlsbad Field Office and the Waste Isolation Pilot Plant Site. This funding provides for management of all security related activities, including physical property protective forces, physical security protection systems, information security, cyber security, and personnel security. Funding will also provide for additional staffing to support receipt of classified waste from the generator sites. Receipt of classified waste also requires physical protection of the waste and enhancements to the information security systems, and the Carlsbad Field Office has installed an Intrusion Detection System to support the receipt of this waste.

The end-state of this project occurs upon the completion of waste receipt in 2030, and a five-year period for decommissioning the surface facilities and permanent closure of the underground. The Department of Energy plans to use active institutional controls, fences, and guards to protect intrusion into the repository for 100 years after the disposal phase ends. (Former PBS was CB-SS-D)

In FY 2004, the following activities are planned to support the accelerated cleanup of legacy transuranic waste.

- Provide additional staffing to support the capability to receive classified waste from the generator sites. Classified transuranic waste is present at six sites. In addition to physical protection of the waste, enhancements to the information security systems must also be implemented. The Waste Isolation Pilot Plant's capability to receive the classified waste from these sites in its current form, without sanitization, will further accelerate cleanup activities across the complex.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Design and installation of intrusion detection systems will enable the Waste Isolation Pilot Plant to received classified waste from Rocky Flats, in support of accelerated closure of that facility (FY 2002).
■ Complete installation of intrusion detection system (January 2003).

OR-0020 / Safeguards and Security - Oak Ridge (life-cycle estimate $82,964K) 11,584 13,164 17,162

This PBS provides: Visitor Control, Classification, Physical Security (locks/alarm access control), Nuclear Materials Control and Accountability, Foreign National Access Control, Security Management Control System, Unclassified Computer Security, Cyber Security, and Personnel Security for the Department of Energy and its contractors at the East Tennessee Technology Park.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Protective Force personnel are employed on various fixed and mobile posts to perform normal and emergency security tasks. Information Security reviews all documents released to the public including Freedom of Information Act and Privacy Act requests, litigation responses, and ongoing environmental health investigations, and classifies/declassifies documents.

Cyber Security develops and reviews security plans and design documents for systems and networks that store classified information, performs system tests to ensure the security configuration and operations are as described in security plans, and investigates security concerns to ensure the containment of the incident, identification of the source of any security breaches, protection of classified data or information, sanitation of media, and security of media and documents. Oversight and Management of Nuclear Material Control and Accountability activities are provided.

Personnel Security provides badging support for all employees, contractors, and visitors, and visitor control. Environmental Management will continue safeguards and security funding until the East Tennessee Technology Park is closed in FY 2008. (Former PBS was OR-SS4-D)

In FY 2004, the following activities are planned to support the accelerated cleanup of the East Tennessee Technology Park.

- The specific tasks performed will be visitor control, classification, physical security (locks/alarm access control), nuclear materials control and accountability, foreign national access control, security management control system, unclassified computer security, cyber security, and personnel security for the DOE and its contractors at the East Tennessee Technology Park.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Provided security services for personnel, equipment, and information relating to DOE missions at the East Tennessee Technology Park including enhanced measures following the September 11, 2002, attacks (FY 2002).
■ Performed specific tasks: visitor control; classification; physical security (locks/alarm access control); nuclear materials control and accountability; foreign national access control; security management control system; unclassified computer security; cyber security; and personnel security for DOE and its contractors at the East Tennessee Technology Park (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

OH-FN-0020 / Safeguards and Security - Fernald (life-cycle estimate $25,635K) 4,701 2,890 3,945

Fernald Safeguards and Security is comprised of three primary activities: Protective Forces, Material Control and Accountability, and Cyber Security. An unarmed protective force activated 24 hours/7 days a week provides protective force patrols, access controls, searches, badge verification, administrative controls, physical barriers, perimeter fence maintenance, employee awareness, tamper protection monitoring, and performance testing of security systems. Material Control and Accountability programs provide inventory control and surveillance of uranium materials (product as well as waste) awaiting off-site disposition. Cyber Security includes development and implementation of computer security policies and procedures, random/specific sampling of user files and Internet access, and computer security protection measures in the configuration of hardware and software. (Former PBS was OHFN-SS-DCL)

In FY 2004, the following activities are planned to support the accelerated cleanup of Fernald.

- Maintain security posture.
- Continue inventory controls on uranium bearing waste.
- Streamline cyber security material costs.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Completed Security Fencing Project (FY 2002).
■ Shipped the final nuclear material product and completed all required documentation to remove product material from Fernald site inventory (FY 2002).

OH-MB-0020 / Safeguards and Security - Miamisburg (life-cycle estimate $51,461K) 5,778 4,678 3,893

The Safeguards and Security program is organized to ensure appropriate levels of protection against unauthorized access; unauthorized possession, use, or sabotage of special nuclear materials; espionage; loss or theft of classified matter or Government property, including nuclear materials; and other hostile acts that may cause unacceptable adverse impacts on national security or on the health and safety of DOE and contractor employees, the public, or the environment.

The project consists of an integrated system of activities, systems, programs, facilities, and policies/procedures for the protection of nuclear materials, classified information, and DOE and certain contractor property and personnel as required by the Atomic Energy Act of 1954 and other statutes, orders, and directives. Key safeguards and security program elements include: Program Management, Personnel Security, Protective Force, Protection Systems, Material Control and Accountability, Information Security, and Cyber Security.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

This scope will be complete once the site is closed in 2006. At the end of FY 2002, most of the site's classified interests had been removed from the site except for small quantities of classified matter needed for the cleanup work. The safeguards and security project has been effective in maintaining access controls and perimeter security of the site, as well as ensuring general site security for personnel and information technology systems. (Former PBS was OHMB-SS-DCL)

In FY 2004, the following activities are planned to support the accelerated cleanup of Miamisburg.

- Continue to support the accelerated site closure activities by focusing on the reduction of Limited Areas, classified holdings, nuclear materials inventories and clearances. Additionally, the safeguards and security organization will support efforts to relocate non-essential personnel to off-site facilities while ensuring proper protection of DOE Safeguards and Security interests.
- Reduce the security footprint at the site to enable accelerated remediation of facilities and release sites.
- Continue to reduce the general workload resulting from the demolition or transfer of site buildings and a corresponding reduction in the total number of personal computers that must be reviewed by computer security personnel.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Conducted physical security and cyber security reviews and prepared a security plan to facilitate relocation of the warehouse facility to an off-site location (FY 2002).
- Reduced Limited Areas by 11,450 square feet (FY 2002).
- Prepared and transmitted DOE Form 741 for the transfer of Plutonium-238 to the Argonne National Laboratory-West for interim storage to the Argonne National Laboratory-West Nuclear Materials Representative and to Nuclear Materials Management and Safeguards System (FY 2002).
- Developed and implemented necessary security measures (fence, alarms, etc.) to open the Vanguard Boulevard Entrance to the site (FY 2002).
- Developed and implemented the Building Access Control Upgrade Project for providing positive access controls to buildings on-site (FY 2002).
- Completed a Classification Guide Minimization Project, reducing the paper guide set by 97 percent (FY 2002).

OH-WV-0020 / Safeguards and Security - West Valley
(life-cycle estimate $33,735K) 2,245 2,210 2,570

The safeguards and security program at the West Valley Demonstration Project includes those activities required to provide: General Security, Physical Security, and Cyber Security for all project activities in accordance with applicable DOE standards and regulations.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

This scope will be considered complete once DOE's mission at the West Valley Demonstration Project is completed before 2035. To date, the safeguards and security program has been effective in maintaining access controls and perimeter security of the site, as well as ensuring general site security for personnel and information technology systems. (Former PBS was OHWV-SS-D)

In FY 2004, the following activities are planned to support the accelerated cleanup of West Valley.

- Provide general security, physical security, and cyber-security for the West Valley Demonstration Project in accordance with all applicable DOE standards, rules and regulations.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Provided general security, physical security, and cyber-security for the West Valley Demonstration Project in accordance with all applicable DOE standards, rules and regulations (FY 2002).

PA-0020 / Safeguards and Security - Paducah (life-cycle estimate $76,366K) 4,103 6,849 6,993

This project provides: Visitor Control, Classification, Personnel Security, Physical Security (locks/alarms, access control), Information Security, COMSEC, Nuclear Materials Control and Accountability, Operations Security, Technical Surveillance Countermeasures, Safeguards and Security Awareness Program, Foreign National Visits/Assignments Management, a Security Management Control System, Classified Computer Security; Personnel Security and review of incidents and infractions (many of which involve legacy issues with decontamination, decommissioning, and demolition and DOE Material Storage Areas projects) for the DOE and its contractors at the Paducah Gaseous Diffusion Plant.

Protective Force personnel are employed on various fixed and mobile posts to perform normal and emergency security tasks. Classification and operations security review all documents released to the public including Freedom of Information Act and Privacy Act requests, litigation responses, and ongoing environmental health investigations, and classify/declassify documents. Oversight and management of nuclear materials control and accountability activities is provided. Personnel security provides badging support for all employees, contractors, and visitors and visitor control. This project is expected to continue as long as DOE and the United States Enrichment Corporation have a site presence. (Former PBS was OR-SS5-D)

In FY 2004, the following activities are planned to support the accelerated cleanup at Paducah Gaseous Diffusion Plant.

- Provide security services for personnel, equipment, information, matter, and special nuclear materials relating to DOE missions, to include decommissioning, decontamination, and demolition activities at the Paducah Gaseous Diffusion Plant.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Provided security services for personnel, equipment, information and special nuclear materials relating to DOE missions at the Paducah Gaseous Diffusion Plant (FY 2002).
■ Conducted a special site-wide security review of all non-leased DOE facilities (FY 2002).

PO-0020 / Safeguards and Security - Portsmouth (life-cycle estimate $164,970K) 11,646 11,917 16,116

This PBS provides an integrated Safeguards and Security Program which includes the following program elements: Physical Protection Protective Forces; Physical Security Systems to include sub-elements barrier/secure storage/locks and entry control/access controls; Information Security to information protection, classification/declassification, technical surveillance countermeasures, and operations security; Personnel security including subtopics clearance program, security awareness, and visit control; Material Control and Accountability; Program Management which includes planning, professional training and development, and policy oversight and administration; Cyber Security which includes classified computer security and communications security.

Protective Force personnel are employed on various fixed and mobile posts to perform normal and emergency security tasks. Information security includes protection of classified and unclassified sensitive information and classification, declassification and review of documents for release to the public including Freedom of Information Act and Privacy Act requests, litigation responses (limited number). Cyber Security includes the maintenance of one stand-alone desktop computer approved for classified processing. Oversight and Management of Nuclear Material Control and Accountability activities is provided. Personnel Security provides processing access authorizations, security education and awareness and badging support. This project is expected to continue as long as DOE and the United States Enrichment Corporation have a site presence. (Former PBS was OR-SS6-D)

In FY 2004, the following activities are planned to support the accelerated cleanup at Portsmouth.

- Provide protective force services through a work authorization with the United States Enrichment Corporation. Maintain security conditions appropriate to the threat.
- Continue Large Scale Classification Review and consolidation and packaging of classified material.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Revised and published Site Security Plan (FY 2002).
■ Revised and published the Nuclear Materials Control and Accountability Plan (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

RL-0020 / Safeguards and Security - Richland (life-cycle estimate $2,077,008K) 54,844 54,654 73,107

The Safeguards and Security Program ensures appropriate levels of protection for Hanford Site facilities against theft or diversion of special nuclear material; acts of radiological sabotage; espionage; theft or loss of classified matter; theft or loss of government property; and other hostile acts that may cause unacceptable impacts on national security, or on the health and safety of employees, the public, or the environment. The end-state of this project occurs upon closure of the Hanford EM mission in 2035. Requirements will be markedly reduced in FY 2006 due to acceleration of de-inventory of the Plutonium Finishing Plant.

This PBS includes the following key activities: development of a comprehensive Foreign National Visitor and Assignee reference manual to assist foreign nationals' understanding of and compliance with Site security, safety, and emergency requirements; maintenance and updating of the Cyber Security Program Plan; analyze for commercial airline impacts to critical facilities; development of a Security Conditions implementation process and assistance in the Alternative Storage Study; development of a security plan for the Fast Flux Test Facility defueling; performance of risk assessments for requests for termination of safeguards on classified material and burial trenches and preparation of a study on safeguards concepts to support the final disposition of the Plutonium Finishing Plant and K Basins. (Former PBS was RL-SS-D)

In FY 2004, the following activities are planned to support the accelerated cleanup at Richland.

- Update the Critical Facility Vulnerability Assessment.
- Provide additional protective forces to support accelerated movement of spent nuclear material to Savannah River and/or the Grout Facility.
- Provide Benton County Sheriff's Office support for the Waste Treatment and Immobilization Plant construction, additional drug testing under the Human Reliability Program, and security clearance processing.
- Complete cyber enhancements such as incident response and reporting, and implementation of password authentication as required by DOE O 205.3.
- Implement the Human Reliability Program.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)

- Developed a comprehensive Foreign National Visitor and Assignee reference manual to assist foreign nationals' understanding of and compliance with Site security, safety, and emergency requirements (FY 2002).
- Updated the Cyber Security Program Plan (FY 2002).
- Completed the analysis for commercial airline impacts to critical facilities (FY 2002).
- Developed a Security Conditions implementation process and provided assistance in the Alternative Storage Study (FY 2002).

(dollars in thousands)

FY 2002	FY 2003	FY 2004

RF-0020 / Safeguards and Security - Rocky Flats (life-cycle estimate $345,944K) 43,896 29,593 28,550

The goal of this PBS is to keep plutonium and classified matter safe, secure, and out of the hands of unauthorized groups or individuals and to protect government property at Rocky Flats. This PBS funds activities for the purpose of protecting DOE security interests. Activities fall into the following areas: Protection Program Operations, Nuclear Material Control and Accountability, Information Security, Personnel Security, and Cyber Security.

Completion of key milestones will reduce safeguards and security costs as the number of Material Access Areas are eliminated in early FY 2004, enabling the site to transition to an industrial security posture consistent with a Property Protection Area, which will continue through the completion of the project. The following are the key milestones, as identified in PBS RF-0011, NM Stabilization and Deposition, for reducing the effort associated with this PBS: complete off-site shipment of Category I and II quantities of special nuclear material, Building 371 Material Access Area Closure, Protected Area Closure, classified material shipped off-site; complete off-site transuranic waste shipments; and complete Building 371 closure.

Protection Program Operations encompasses those activities that protect the entire site to include: the Protective Force (Security Police Officers), Access Control, Alarm Response, and the Special Response Team.

Nuclear Material Control and Accountability encompasses those activities necessary to provide special nuclear material accounting in accordance with DOE requirements, and supports ongoing and new risk reduction, material consolidation, and nuclear material hold up removal activities. These activities provide assurance that special nuclear material is properly controlled and accounted for at all times.

Information Security encompasses those activities that ensure that material and documents that may contain sensitive or classified information are identified, reviewed, appropriately marked and protected from unauthorized disclosure, and ultimately destroyed in a timely manner in accordance with DOE requirements.

Personnel Security encompasses those activities necessary to ensure only authorized personnel access the site and the controlled areas within the site.

Cyber Security encompasses those activities that ensure the protection of sensitive or classified information that can be electronically transmitted. (Former PBS was RF-SS-DCL)

In FY 2004, the following activities are planned to support the accelerated cleanup at the Rocky Flats Environmental Technology Site.

- Significant progress will be made in FY 2004 in reducing security resource needs as a result of closing the site's last remaining Material Access Area located in Building 371, and eliminating the Reduced Protected Area that currently surrounds Building 371.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Continue to fund protection program operations, personnel security, information security, computer security, access control, and nuclear material control and accountability activities. These activities are necessary to ensure the security of people working on site, the security of remaining classified material, the accountability of nuclear matter being disposed of as transuranic and low-level waste, and being able to respond appropriately if a category I or II quantity of Special Nuclear Material is found during decontamination and decommissioning of the plutonium buildings.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ Received the highest grade possible for the third consecutive year on its annual safeguards and security inspection conducted by DOE-Headquarters (FY 2002).

SR-0020 / Safeguards and Security - Savannah River
(life-cycle estimate $4,972,169K) 102,825 93,153 144,180

The Safeguards and Security Program ensures appropriate levels of protection for Savannah River Site facilities against theft or diversion of special nuclear material; acts of radiological sabotage; espionage; theft or loss of classified matter; theft or loss of government property; and other hostile acts that may cause unacceptable impacts on national security, or on the health and safety of employees, the public, or the environment.

The mission of Wackenhut Services, Inc. is to provide protective force security of our nation's nuclear weapons stockpile and nuclear material, and to protect people and the environment. Protection Program Operations encompasses those activities that protect the entire site to include: the Protective Force (Security Police Officers), Access Control, Alarm Response, Aviation Operations, and the Special Response Team. The Westinghouse Savannah River Company provides safeguards and security support for the strategic plan elements of national security and non-proliferation by providing policy direction, documentation, technical support and oversight of an integrated system of activities, programs, and facilities including Material Control and Accountability.

Nuclear Material Control and Accountability encompasses those activities necessary to provide special nuclear material accounting in accordance with DOE requirements, and supports ongoing and new risk reduction, material consolidation, and nuclear material hold up removal activities. These activities provide assurance that special nuclear material is properly controlled and accounted for at all times.

Information Security encompasses those activities that ensure that material and documents that may contain sensitive or classified information are identified, reviewed, appropriately marked and protected from unauthorized disclosure, and ultimately destroyed in a timely manner.

Personnel Security encompasses those activities necessary to ensure only authorized personnel access the site and controlled area within the site.

Cyber Security encompasses those activities that ensure the protection of sensitive or classified information that is electronically transmitted. (Former PBS was SR-SS-D)

(dollars in thousands)

FY 2002	FY 2003	FY 2004

In FY 2004, the following activities are planned to support the accelerated cleanup at the Savannah River Site.

- Maintain appropriate security at the Site. This provides for approximately 600 protective force personnel and appropriate aviation support, law enforcement, canine corps for bomb and drug detection, and classified information protection. Other miscellaneous safeguards and security needs are also provided for functions such as maintaining site-wide nuclear material accountability systems.

Key Accomplishments (FY 2002) / Planned Milestones (FY 2003/FY 2004)
■ The Safeguards and Security program supported national security interests through the protection of the Savannah River Site nuclear weapons materials, production facilities, and classified matter from theft, sabotage, or unauthorized control/access (FY 2002).
■ Wackenhut Services, Inc.-Savannah River Site - completed short-notice protective force staffing in support of the K-Area Material Storage project (FY 2002).
■ Westinghouse Savannah River Company - supported site missions and national security interests in the areas of Personnel Security, Physical Security, Cyber Security, Information Security, and Material Control and Accountability in HB Line Phase II Operational Readiness Review, K-Area Material Storage Material Assess Area readied for material receipt (FY 2002).
■ Westinghouse Savannah River Company - successful program implementations in two Office of Inspector General reviews/audits: Material Control and Accountability procedures and practices rated "Best in Complex", and unclassified financial and infrastructure computing systems revealed no findings (FY 2002).
■ Provided protective force staffing support for the K-Area Material Storage receipt of materials from Rocky Flats (October 2002).
■ Provide protective force staffing for the new Packaging and Stabilization Project (March 2003).

Total, Defense Site Acceleration Completion, Safeguards and Security	**244,361**	**221,614**	**299,977**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
CB-0020 / Safeguards and Security - Waste Isolation Pilot Plant	
■ Increase in funding provides for physical property protection at the facilities in Carlsbad, increased protective forces to cover receipt of classified waste; enhancements to information security and cyber security systems. Also, security clearance processing costs previously paid for by Albuquerque must now be paid by the Carlsbad Field Office.	955
OR-0020 / Safeguards and Security - Oak Ridge	
■ Increase in funding required to support additional security requirements at the K-25 Building.	3,998
OH-FN-0020 / Safeguards and Security - Fernald	
■ Increase in funding is due to revised manpower and material estimates based on continuing the security posture. The increase also includes maintenance and up-keep of the emergency access road.	1,055
OH-MB-0020 / Safeguards and Security - Miamisburg	
■ Decrease results from the cessation of mission and relocation of the Nuclear Energy Program plutonium materials activities and related work scope to Argonne National Laboratory-West.	-785
OH-WV-0020 / Safeguards and Security - West Valley	
■ No significant change.	360
PA-0020 / Safeguards and Security - Paducah	
■ No significant change.	144
PO-0020 / Safeguards and Security - Portsmouth	
■ Increase in funding required to support security requirements at the Portsmouth Site.	4,199
RL-0020 / Safeguards and Security - Richland	
■ Increase in funding supports updating the Critical Facility Vulnerability Assessment; the Benton County Sheriff's Office traffic control and criminal law enforcement support for the additional employees (3,000 to 5,000) in support of the Waste Treatment and Immobilization Plant construction, additional drug testing under the Human Reliability Program, and security clearance processing. Additional resources are included to support accelerated movement of special nuclear material to Savannah River and/or the Grout Facility in support of the Performance Management Plan acceleration initiative.	18,453

	FY 2004 vs. FY 2003 ($000)
RF-0020 / Safeguards and Security - Rocky Flats	
■ Decrease reflects a reduction in security resource needs as a result of closing the site's last remaining Material Access Area located in Building 371 and eliminating the Reduced Protected Area.	-1,043
SR-0020 / Safeguards and Security - Savannah River	
■ Increase in funding supports protective force staffing for the HB Line Category I Process and Plutonium Stabilization activities, perimeter improvements, maintenance on security systems, vulnerability assessments, and Capital and General Plant Project upgrades, such as, purchase of a neutron portal, implement bar code technology, configuration management system, canine operations facilities, and live fire shoot house roof.	51,027
Total Funding Change, Defense Site Acceleration Completion, Safeguards and Security	**78,363**

Technology Development and Deployment

Mission Supporting Goals and Measures

The EM Technology Development and Deployment program provides technical solutions and alternative technologies to assist with the accelerated cleanup of the DOE complex. The program is focused on a limited number of critical, high-payback activities where step improvements can be gained as well as activities at closure sites that will find timely solutions to resolve high-risk activities within the closure baselines. The functional areas are as follows:

- Closure Site Projects - Considering the importance of achieving cleanup at the closure sites (Rocky Flats, Ohio and small projects) by the end of year 2006 or earlier, there are specific technical challenges which need immediate solutions. Projects will be jointly initiated by the Technology Development and Deployment program and the closure site to find timely solutions to resolve high-risk activities within the approved baselines. They include applied engineering and development, technology demonstrations, and cost sharing for technology deployment.
- Technical Solutions - On a case by case basis, a multidisciplinary technical team, with expertise for the specific site problem, will be organized to benchmark or independently review clean up problems and provide recommendations or technical advice to quickly resolve technical issues.
- Alternative Projects - Alternative approaches to current high-risk/high-cost baselines will be developed to enable cleanup to be accomplished at reduced costs and accelerated schedules.

Closure Site Projects are of a short-duration (3- to 36-months) and will be provided only where there is clear benefit to the government to help reduce the risk of an alternative approach. They must result in significant impact to the site, demonstrate measurable savings to the government, and reduce technical risk for the site closure project.

Technical Solutions are to provide the closure sites (Rocky Flats and Ohio) with technology and technical support to meet closure schedules and to provide technical solutions at all other sites to accelerate closure. Funding will not be used to support ongoing operation and maintenance, supplement baselines to accelerate schedules, coordinate groups developing databases, or information technology equipment. Support is generally in the form of technical teams requested by the site that will:

- Benchmark site baselines in order to identify the technical risks associated with site closure;
- Provide technologies or technical alternatives for consideration by the site to reduce closure project risk; and,
- Provide independent multidisciplinary expertise to all sites to resolve technical issues associated with accelerated closure.

Alternative Projects consist of the development of alternatives and step improvements to high risk/high cost baselines. A critical aspect of this thrust is an EM corporate approach for identifying potential alternatives and analyzing their merits and requirements. Implementation of this approach will determine where the greatest potential benefits can be realized from investments in alternatives. These projects are to address (one or more) program goals: reduce cleanup costs, shorten cleanup schedules, decrease worker exposure, or reduce overall risk.

Subprogram Goals

Closure Projects:

Support those technology development and deployment activities required by the closure sites' Baseline Integrated Closure Plans and Risk Mitigation Plans.

Technical Solutions:

- Mitigate the technical issues that could result in the delay of closure site schedules;
- Provide temporary multi-disciplinary technical teams comprised of technical staff from EM programs, the national laboratories, industry, and universities that can be rapidly deployed and respond to all closure site request to address specific technical issues; and
- Support EM review of closure site baselines to identify the technical risks associated with site closure and ensure that necessary technologies or solutions are available and being considered that reduce project and schedule risk.

Alternative Projects:

- Identify and/or develop improvements or viable alternatives that are available to management at key decision points as the cleanup progresses to enable baselines or provide step change improvements within the context of existing high-risk/high-cost baselines.
- Provide the scientific rationale for modifications of regulations and current best practices that can have major impacts on the EM program if implemented.

Performance Indicators

The Technology Development and Deployment program provides technical solutions to specific site problems to: 1) improve the effectiveness to achieve the cleanup standards; 2) reduce the cost for the cleanup; 3) accelerate the schedule for cleanup; and 4) reduce worker exposure to radiation and industrial risks.

The concept for the performance indicators is to measure the contribution of technology development in addressing problems which are relevant to the sites and for a specific problem which is either a high-risk/high-payoff for the sites with extended cleanup challenges or hampering the ability of a closure site to meet its closure date. Specific goals for technical, cost and schedule improvements over the baseline will be developed for each project in the Technology Development and Deployment program. At the Technology Development and Deployment program level, the performance indicator will be: What percentage of projects have met their specific improvement goals? The goal for the EM Technology Development and Deployment program will be for 75 percent of the projects to meet the specific improvement goals established. The expectation for the EM Technology Development and Deployment program is that each deployment endeavor achieve success however, the nature of the program requires a recognition that some deployments may not achieve established goals.

The Office of Environmental Management is currently in the process of establishing site resource-loaded baselines which are expected to be completed during FY 2003. The establishment of these site baselines will enable the program to more meaningfully monitor and evaluate actual

performance against the new accelerated baselines. The Office of Environmental Management believes significant strides have been made in its ability to monitor and demonstrate performance through the establishment of new corporate measures, implementation of a strict configuration management system, and the expected completion of new accelerated site baselines in FY 2003. The Office of Environmental Management acknowledges that the program needs to continue to improve upon the progress made to date to further develop project management techniques and associated cost and schedule performance measures. This will enable EM to demonstrate more clearly performance in meeting the program goals of accelerated risk reduction and site cleanup, thereby reducing life-cycle costs.

Annual Performance Results and Targets

EM technology development and deployment investments are focused on high-payoff site closure and remediation problems through two types of projects:

Closure Projects: Provides principal near-term closure sites with technical support and quick response, highly focused technology development and deployment projects. The goal is to ensure that accelerated site closure schedules are achieved.

- At the Rocky Flats and Ohio closure sites, technical assistance teams will assess critical technical issues and provide technology alternatives including the treatment and disposition of orphan wastes streams.
- At Mound, innovative technologies will be developed to determine and enable treatment of radioactive contaminated soil beneath buildings.
- At Fernald, the vacuum thermal desorption demonstration will be completed to provide a technical solution for an orphaned waste stream and a comprehensive review to determine the practical use of natural monitored attenuation for metal and rad contamination.

Alternative Projects: Provides alternative approaches and step improvements to current high-risk/high-cost baseline remediation projects. The goal is to enable cleanup to be accomplished safely, at less cost, and on an accelerated schedule.

- At Savannah River, a prototype sludge pump will be deployed for completion of cold test and hot validation in support of the Alternatives for Immobilization of High-Level Sludge Waste project. An accelerated alpha removal and filtration system will be selected to support the Alternatives for Disposition of High-Level Salt Waste project.
- At the Hanford site, characterization activities will provide a validated conceptual model(s) which will be completed describing the nature, extent, and mass of dense non-aqueous phase liquid for the remedial action decision in support of the Alternatives for Carbon Tetrachloride Source Term Location project.

Significant Program Shifts

The Technology Development and Deployment program has been streamlined and focused on a limited number of critical, high payback activities where step improvements can be gained as well as projects supporting closure sites versus a large number of activities that offer only incremental improvement. The program is focused on reducing risk and cost of cleanup (not a general research and development

program), utilizing past investments in technical solutions and highly focused technology development and deployment projects that are risk-driven.

Acquisition Strategy

With the realignment of projects, there is a corresponding shift in the acquisition strategy to optimize the benefits of the new program that will focus on individual site requirements. Projects supporting closure sites will be contracted through the closure contractor. For alternative projects, the strategy will be to contract with "technology developers/integrators" to perform the technology development work required to solve the technical issues. Typically, projects will be competed among private sector firms who will have the flexibility to utilize the Department's research and development laboratories. However, projects will be competed among the Department's research and development laboratories when unique expertise and facilities are required. It is expected the research and development laboratories would utilize private firms for equipment development. In either case, it is expected that multiple contractors would be selected to develop technology integration plans to identify the activities required to solve the technical issues, which activities are already being addressed by the private sector or other Federal agencies, and the cost and schedule to complete the development activities. After evaluation, a down select decision would be made, potentially maintaining multiple contractors, for initial development activities. Depending on the confidence in succeeding development activities, the cost and the schedule, further down selections will be made.

In certain instances where a firm has unique capabilities, the work may be a sole source award. The real incentive for the private firms and the research and development laboratories is to be successful with each phase, so they can continue into the next phase. Each contract will have specific deliverables and off ramps at critical points to determine if there is improvement over the baseline technical approach. Review panels consisting of experts both inside and outside of the Department will be utilized to review the technology integration plans and deliverables. Where there are significant technical issues, there will be consideration for requesting an evaluation by the National Academy of Sciences.

Since the alternative projects will focus on site specific issues, technical experts from the sites will play key roles in establishing the performance goals, developing the scopes of work, assisting with the selection of integrating contractors, evaluating the integrating contractors' deliverables, and comparing the alternative project performance improvements with the baseline approach. The decision to proceed with an alternative project will typically be made based on: 1) those cleanup issues deemed to be high-risk and high-cost and on which an alternative could have a major impact in reducing costs, risks, and schedules; 2) the site can provide the necessary technical support; 3) a technical alternative can be developed in time to influence the cleanup decision; and 4) the site has a clear strategy for implementing alternative technologies which meet the performance goals.

Funding by Site

(dollars in thousands)

	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Carlsbad Field Office					
Carlsbad Area Office	200	0	0	0	0.0%
Chicago Operations Office					
Ames Laboratory (IA)	848	0	0	0	0.0%
Argonne National Laboratory (West) (ID)	1,543	0	0	0	0.0%
Brookhaven National Laboratory (NY)	1,125	0	0	0	0.0%
Chicago Operations Office (IL)	2,958	0	0	0	0.0%
Total, Chicago Operations Office	6,474	0	0	0	0.0%
Idaho Operations Office					
Idaho National Engineering and Environmental Laboratory (ID)	34,313	0	0	0	0.0%
Idaho Operations Office (ID)	5,926	0	0	0	0.0%
Total, Idaho Operations Office	40,239	0	0	0	0.0%
Oak Ridge Operations Office					
Oak Ridge Operations Office (TN)	12,747	0	0	0	0.0%
Ohio Operations Office					
Fernald Environmental Management Project (OH)	4,110	2,500	2,177	-323	-12.9%
Mound (OH)	1,000	2,500	2,178	-322	-12.9%
West Valley (NY)	1,620	0	0	0	0.0%
Ohio Operations Office (OH)	3,957	0	0	0	0.0%
Total, Ohio Operations Office	10,687	5,000	4,355	-645	-12.9%
Richland Operations Office					
Pacific Northwest National Laboratory (WA)	12,485	0	0	0	0.0%
Richland Operations Office (WA)	5,434	0	0	0	0.0%
Total, Richland Operations Office	17,919	0	0	0	0.0%
Office of River Protection					
River Protection (WA)	100	0	0	0	0.0%
Rocky Flats Office					
Kaiser Hill (CO)	3,647	5,000	4,355	-645	-12.9%
Savannah River Operations Office					
Savannah River Site (SC)	18,538	0	0	0	0.0%
Savannah River Operations Office (SC)	2,932	0	0	0	0.0%
Total, Savannah River Operations Office	21,470	0	0	0	0.0%
Washington Headquarters					
Washington, D.C.	9,913	82,000	55,210	-26,790	-32.7%

(dollars in thousands)

	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Various Locations					
Albuquerque Operations Office (NM)	5,240	0	0	0	0.0%
Lawrence Berkeley National Laboratory (CA)	1,133	0	0	0	0.0%
Lawrence Livermore National Laboratory (CA)	125	0	0	0	0.0%
Los Alamos National Laboratory (NM)	3,234	0	0	0	0.0%
National Energy Technology Laboratory (WV)	51,502	0	0	0	0.0%
Nevada Operations Office (NV)	4,628	0	0	0	0.0%
Oakland Operations Office (CA)	390	0	0	0	0.0%
Pantex (NM)	345	0	0	0	0.0%
Sandia National Laboratory (NM)	5,196	0	0	0	0.0%
Western Environmental Technology Office	5,000	0	0	0	0.0%
Total, Various Locations	76,793	0	0	0	0.0%
Total, Technology Development and Deployment	200,189 [a]	92,000 [b]	63,920 [b]	-28,080	-30.5%

[a] Excludes $3,968,000 ($3,743,000 for Small Business Innovation Research and $225,000 for Small Business Technology Transfer Program) transferred to DOE Office of Science for award and administration of grants to small businesses.

[b] Final distribution of funds by site in FY 2003 and FY 2004 could change based upon final appropriations, changing priorities, and final receipt, review and selection, and award of technical proposals which may be from sources other than the above locations.

Funding Schedule

(dollars in thousands)

	FY 2002 Comparable Appropriation	FY 2003 Original Request	FY 2003 Adjustments	FY 2003 Comparable Request	FY 2004 Request
Closure Projects	14,334	10,000	0	10,000	8,710
Technical Solutions	0	5,000	0	5,000	5,000
Alternatives Projects	185,855	74,562	535	75,097	48,866
Small Business Innovative Research Program	0 [a]	2,438	(535)	1,903	1,344
Total, Technology Development and Deployment	200,189	92,000 [b]	0	92,000 [b]	63,920 [b]

Project Descriptions

Closure Projects

Ohio

- In FY 2004 through FY 2006, technology development and deployment activities at the Ohio site will primarily be focused on the Fernald and Mound sites. At Fernald, the principal activities will center on the disposition of the silos, finding disposition paths for unique and orphan wastes, and treatment of contaminated soils under the silos and buildings. At Mound, the principal activities center on decommissioning and demolition of the radiologically-contaminated facilities and the treatment of contaminated soils.

Rocky Flats

- In FY 2004 through FY 2006, technology development and deployment activities at Rocky Flats will be primarily focused on: 1) treatment and disposal of small volume radioactive and hazardous wastes where no treatment and disposition pathway currently exist; 2) subsurface identification, characterization and in-situ treatment of buried pipelines and utilities; 3) characterization and decontamination of highly-contaminated facilities such as building 371 and 776/777; and 4) supporting critical environmental restoration activities such as landfill cap and cover designs.

[a] Excludes $3,968,000 ($3,743,000 for Small Business Innovation Research and $225,000 for Small Business Technology Transfer Program) transferred to DOE Office of Science for award and administration of grants to small businesses.

[b] Final distribution of funds by program area in FY 2003 and FY 2004 could change based upon final appropriations, changing priorities, and final receipt, review and selection, and award of technical proposals which may be from sources other than the above locations.

Alternative Projects

Richland/Hanford

- *Alternatives for Tank Waste Immobilization, Hanford, WA*: The overall goal of the immobilization effort at Hanford is to reduce the technical risks and costs of immobilizing the high-level waste into a form that is acceptable for disposal. This project offers an alternative waste disposal system that minimizes costs and schedule by reducing the volume of the final waste form, while simultaneously minimizing processing costs and technical risk.
- *Alternatives for Carbon Tetrachloride Source Term Location, Hanford, WA*: This project addresses the cleanup of 750,000 kg of carbon tetrachloride released to the subsurface at the Hanford Z Plant complex in the 200 W Area. The ultimate goal is to identify the optimum remediation process. This project focuses on demonstrating technologies for characterizing and quantifying the remaining subsurface carbon tetrachloride, which is critical for the remediation decision.
- *Alternatives for Remediation of Leaked High-level Waste Below Tanks, Hanford, WA*: This project provides the technical and regulatory basis to support the Office of River Protection plan to close the tanks using a risk-based approach. Using this approach, the first set of tanks would be closed in 2008. The project will focus on the development of cheaper and longer life covers for use at the Hanford site. These covers will be put in place starting in 2012.

Savannah River

- *Alternatives for Disposition of High-level Salt Waste, Savannah River, SC*: This project provides the science and technology to accelerate the salt processing by demonstrating approaches that can be deployed near term, utilizing existing facilities whenever possible, and reduce the cost (> $2B savings) and time for the disposition of salt associated with Savannah River Site high-level wastes. The goal of this project is to maximize the volume of waste that can be removed safely from the storage and process tanks that is either sent directly to the Saltstone Facility for solidification or to provide minimal processing prior to sending to the Saltstone Facility. To achieve this goal, less expensive technologies are needed to remove interstitial supernate from saltcake, retrieve the saltcake in a form suitable for grouting, and perform less rigorous radionuclide removal sufficient to meet the acceptance criteria of the Saltstone Facility.
- *Alternatives for Immobilization of High-level Sludge Waste, Savannah River, SC*: This project supports the strategic initiatives WM-1: Expedited High-level Waste Processing, and WM-2: Expedited Risk-based Tank and Facility Closure in the Savannah River Site Environmental Management Program Performance Management Plan. Together with a separate alternatives project and site initiatives to accelerate salt processing, it is expected that the combined impacts of these efforts will reduce the overall high-level waste schedule at the Savannah River Site by 8-10 years. The goal of this project is to deliver technologies to accelerate bulk sludge retrieval, feed preparation for the Defense Waste Processing Facility, and immobilization to enable an accelerated closure of Savannah River Site high-level waste tanks.
- *Alternatives for Remediation of Chlorinated Ethenes using Monitored Natural Attenuation, Savannah River, SC*: This project applies monitored natural attenuation, in conjunction with other innovative technologies, to environmental restoration at the Savannah River Site. Monitored natural attenuation consists of monitoring natural processes in the subsurface to ensure risks caused by contaminants are diminishing at acceptable rates. The project scope at the Savannah River Site is to:

(1) identify and develop an innovative methodology to long-term monitoring that emphasizes integrated state-of the-art instrumentation measures of natural attenuation processes including enhanced modeling; (2) understand the scientific basis for using monitored natural attenuation emphasizing interactions with surface and subsurface ecosystems, and active processes occurring near groundwater outcrop zones and at similar interfaces; and (3) use existing and new regulatory and stakeholder technical interfaces to document a shared understanding of monitored natural attenuation for establishing a protocol for the new approach to long-term monitoring of groundwater in humid soils.

Oak Ridge

- *Alternatives for Deposit Removal at Gaseous Diffusion Plants, Oak Ridge, TN*: This project identifies, develops, and demonstrates state-of-the-art technologies for the characterization and decontamination of highly enriched uranium and technetium-99 in gaseous diffusion plants in the DOE Oak Ridge complex. This project provides characterization technologies for non-destructive assay of highly enriched uranium and fission product deposits, and in situ highly enriched uranium and technetium-99 removal/decontamination methods that can eliminate the current baseline shortcomings.
- *Alternatives for Cleanup of Trichloroethylene under Buildings, Paducah, KY*: The objectives of this project are: 1) use innovative technology to better delineate the trichloroethylene source and dissolved phases in the vadose and saturated zones; 2) investigate and demonstrate alternative technologies to remediate the soil and groundwater plume(s) at the C-400 building; 3) conduct optimized groundwater flow, transport, and remediation modeling of the plume to guide cleanup/remediation phases; and 4) innovatively monitor the efficacy of remediation efforts and permeable reactive barrier performance to determine if cleanup efforts and target indicator levels are being attained.
- *Alternatives for Expedited Processing of Scrap Metal/Equipment, Oak Ridge, TN*: This project permits the characterization of scrap and allows for free release (uncontaminated material), disposal in on site disposal cells, and disposal at commercial and/or Nevada Test Site depending upon the level of contamination. This project is to provide alternative processes and tools for expedited disposition of Oak Ridge equipment (e.g., from the Gaseous Diffusion Plants) and scrap metal (e.g., from the Y-12 Salvage Yard).

Detailed Program Justification

(dollars in thousands)

FY 2002	FY 2003	FY 2004
Closure Projects	**14,334**	**10,000**	**8,710**

In support of the closure schedules at the Rocky Flats and Ohio sites, technology and technical assistance will be provided to mitigate technical issues which could impede or delay site closure. FY 2004 activities for technical assistance and technology development include:

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Identify pathways or technology needed to treat and dispose the remainder of the orphan wastes streams at Rocky Flats.
- Demonstrate and evaluate an improved monitoring and surveillance system at Rocky Flats, enabling real-time analysis of environmental sampling results and speeding the decision process.
- Demonstrate an evapotranspiration cover, rather than the more expensive Resource Conservation Recovery Act cap, for the Old Landfill at Rocky Flats, which will save time and cost versus the baseline.
- Complete the demonstration of Vacuum Thermal Desorption waste treatment technology at Fernald to allow disposal of highly-contaminated material.
- Identify and evaluate a methodology to treat radiologically-contaminated soils under and around buildings at Mound.
- Evaluate and test design of heel removal systems in Fernald Silos 1 and 2.

Technical Solutions **0** **5,000** **5,000**

On a case by case basis, a multidisciplinary technical team, with expertise for the specific site problem, will be organized to benchmark or independently review clean up problems and provide recommendations or technical advice to quickly resolve technical issues.

Alternative Projects **185,855** **75,097** **48,866**

Activities will be implemented through a small set of high-impact projects focused on specific site baselines with high technical or programmatic risk and/or high cost. FY 2004 activities include:

Alternatives for Tank Waste Immobilization Project at Hanford, WA:

- Evaluate viable alternative technologies to immobilize high-level waste and present a recommendation on a proposed path forward.

Alternatives for Carbon Tetrachloride Source Term Location Project at Hanford, WA:

- Complete characterization activities to confirm the conceptual model and provide a validated conceptual model(s) that will describe the nature, extent, and mass of dense non-aqueous phase liquid to support a step change remedial action decision.

Alternatives for Remediation of Leaked High-level Waste Below Tanks Project at Hanford, WA:

- Complete a preliminary design and a cost analysis for a surface barrier system and perform a peer review.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Alternatives for Disposition of High-Level Salt Waste Project at Savannah River, SC:

- Select final design for radiation hardened filtration technology and optimum alpha removal technology.

Alternatives for Immobilization of High-Level Sludge Waste Project at Savannah River, SC:

- Acquire a prototype sludge pump for cold test and hot validation.

Alternatives for Remediation of Chlorinated Ethenes Using Monitored Natural Attenuation Project at Savannah River, SC:

- Begin identifying new, innovative approaches to address separate and unique needs for characterization and long-term monitoring of large, contaminated groundwater plumes.
- Initiate improving the understanding of the scientific basis for using monitored natural attenuation, how it works as a system, and document sustainable mechanisms and practical deployment scenarios. Emphasize interactions with surface and subsurface ecosystems and active processes occurring near groundwater outcrop zones and at similar interfaces.

Alternatives for Deposit Removal at Gaseous Diffusion Plants Project at Oak Ridge, TN:

- Complete bench-scale demonstration of technology for in situ removal of highly enriched uranium and technetium-99 deposits from gaseous diffusion plant equipment and components to enable decision making for pilot-scale deployment;

Alternatives for Cleanup of Trichloroethylene under Buildings Project at Paducah, KY:

- Evaluate the efficacy of pilot-test remediation technologies, such as six-phase heating, C-Sparge, and dynamic underground heating to remove or reduce the trichloroethylene source; and conduct optimized groundwater flow, transport, and remediation design modeling of the trichloroethylene source and dissolved phase plume to guide cleanup and remediation efforts.

Alternatives for Expedited Processing of Scrap Metal/Equipment Project at Oak Ridge, TN:

- Complete full-scale demonstration of advanced innovative characterization technology on select Oak Ridge K-770 scrap metal and equipment to ensure the expedited disposition of scrapyard, and complete full-scale demonstration of advanced innovative characterization technology on first phase of Y-12 scrap metal and equipment inventory in ensuring adequate certification for shipping and disposal.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

Small Business Innovative Research Program . . . . . 0 [a] 1,903 1,344

Funding for the Small Business Innovative Research assessment in accordance with Public Law 102-564, which mandates a percentage of all research and development dollars be set aside for grants to small businesses. Once funding is appropriated, it is transferred to the DOE Office of Science for award and administration of grants to small businesses.

Key Accomplishments (FY 2002/FY 2003)

- In response to the results of "Top to Bottom" review of the Environmental Management Program, the EM Technology Development and Deployment Program has been focused on a limited number of critical, high-payback activities. The organization has been streamlined and over 300 individual technical tasks being conducted by Focus Areas have been or are being brought to closure (FY 2002 and FY 2003).
- Technical projects were selected and milestones established for Rocky Flats, Ohio, and other facilities to accelerate closure for FY 2003 (FY 2002).
- Select closure projects for Rocky Flats and Ohio (FY 2003).
- Alternative projects were selected and milestones established for the FY 2003 program (FY 2002).
- Began Alternative projects such as:
  - < Hanford: Tank Waste Immobilization Alternatives; and Alternatives for Carbon Tetrachloride Source Term Location.
  - < Savannah River: Alternatives for Disposition of High-Level Salt Waste; Alternatives for Immobilization of High-Level Sludge Waste; and Monitored Natural Attenuation for Groundwater Cleanup.
  - < Oak Ridge: Alternative for the Deposit Removal at the Gaseous Diffusion Plant; Alternative for Cleanup of Trichloroethylene Under Buildings; and Expedited Processing of Scrap Metal/Equipment (FY 2003).
- Supported the Savannah River Salt Processing Project Down-selection process. Two years of intense research and development on three cesium removal technologies enabled a decision on which decontamination method to deploy on Savannah River Site salt waste, and will reduce the costs and technical risks associated with implementing the process (FY 2002).
- Demonstrated the UNEX Process to separate the small amount of highly radioactive constituents from the bulk of the tank waste, thereby minimizing the quantity that must be disposed in the national repository. The advantage over existing technology is the ability to remove all radionuclides in a single process (FY 2002).
- Deployed the Fluidic Sampling and Retrieval System at TRA 630 Catch Tank which is capable of separating the liquid phase from the waste heel, sampling the heel following mixing and mobilization, and pumping the waste into 55-gallon drums for storage and disposal (FY 2002).
- Demonstrated a high-technology polymer-solidifying agent that can provide a simple and effective disposal method for tritiated oil at Rocky Flats (FY 2002).
- Deployed technologies to accelerate demolition/recycling of construction materials for road construction and for segmenting large, hard-to-cut plate steel and tanks at Fernald (FY 2002).

[a] Excludes $3,968,000 ($3,743,000 for Small Business Innovation Research and $225,000 for Small Business Technology Transfer Program) transferred to DOE Office of Science for award and administration of grants to small businesses.

(dollars in thousands)

FY 2002	FY 2003	FY 2004

- Conduct an engineering evaluation to identify treatment and retrieval options for Tank 48 at Savannah River that currently contains 250,000 gallons of potassium tetraphenyl borate and cesium tetraphenyl borate and design, build, and demonstrate a system or systems to retrieve salts and treat the residual organics from the tank (FY 2003).
- Provide operating envelopes for Savannah River alternative salt processes through the use of modeling and laboratory experiments. Efforts will focus on: improving salt cake dissolution technologies; determining downstream processing impacts of sodium aluminosilicate and other solids; and determining whether gibbsite layers will form during salt cake dissolution preventing removal of low curie salt (FY 2003).
- Design a system to mix, retrieve and treat the mixture of transuranic organic ion-exchange resin and sludge wastes in T1, T2, and the high flux isotope reactor at the Oak Ridge National Laboratory (FY 2003).
- Support the evaluation of grouting as an alternative to excavation, treatment, and disposal of mercury-contaminated soils at the Oak Ridge Y-12 Plant (FY 2003).
- Design and fabricate tank specific components to mobilize and retrieve the contents of the legacy waste tanks contaminated with Plutonium at the Los Alamos National Laboratory (FY 2003).
- Verify the performance of key process instrumentation for process control for grouting waste from Silos 1 and 2 at Fernald, through testing with actual waste. This includes a clamp-on radiation detector for determining the Rn-226 content, and a coriolis meter for determining the solids content of waste slurries containing material from Silos 1 and 2. The project will also verify the performance of selected pumps for conveyance of waste slurries through testing (FY 2003).

Total, Technology Development and Deployment	200,189	92,000 [a]	63,920 [a]

[a] Final distribution of funds by program area in FY 2003 and FY 2004 could change based upon final appropriations, changing priorities, and final receipt, review and selection, and award of technical proposals which may be from sources other than the above locations.

Explanation of Changes From FY 2003 to FY 2004

	FY 2004 vs FY 2003 ($000)
Closure Projects	
■ Due to emphasis on funding for accelerated risk reduction activities, technology development activities have been reduced and redirected to focus on a limited number of critical, high-payback projects	-1,290
Alternative Projects	
■ Due to emphasis on funding for accelerated risk reduction activities, technology development activities have been reduced and redirected to focus on a limited number of critical, high-payback projects	-26,231
Small Business Innovative Research Program	
■ Overall decrease in research and development activities provides a smaller program base for which Small Business Innovative Research initiatives can be administered . . .	-559
Total Funding Change, Technology Development and Deployment	-28,080